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*Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society*

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# MINNESOTA MEDICINE

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VOL. XIII APRIL, 1930 No. 4


## RELATIONSHIP BETWEEN CHILDHOOD AND ADULT TYPES OF TUBERCULOSIS


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*Minneapolis*


THE army of the tuberculous is recruited from those infected in childhood." This statement has been interpreted in several ways. Some believe that the initial infection is always contracted in childhood, lies dormant for a time, then overwhelms its host. They believe that after the first infection exogenous sources of tubercle bacilli play no part. The most modern interpretation is that tuberculous infection, whether it first occurs in infancy, childhood or adult life, prepares the way for the adult type of tuberculous disease. The first infection confers some immunity which results in an ability of the tissues to fix or hold bacilli subsequently gaining entrance to the body wherever they find lodgment. Thus instead of being swept off to the regional lymph nodes they remain for the most part in their place of lodgment where they multiply and produce disease. This brings us to the points of differentiation between the childhood and adult types of tuberculosis.

1. The childhood type often develops in children, but may also occur at any time in life in a person who has not previously been infected with tubercle bacilli. Therefore, the childhood type is a result of first infection. The adult type is usually seen in adults, but may appear in children. It is the result of reinfection.

2. The childhood type may be found in any part of the lung, whereas the adult type usually makes its first appearance in the region of the apex, most often just beneath the clavicle.

3. In the childhood type the hilum and tracheobronchial lymph nodes are very quickly involved, whereas in the adult type these nodes usually do not become involved.

4. In the childhood type both in the lung parenchyma and in the regional lymph nodes the lesions usually become caseous and later calcified. Cavitation is rare and there is only slight tendency towards fibrosis. Around the parenchymal lesion still later true bone may be deposited. In the adult type there is a strong tendency for the caseous lesions to become excavated and for fibrous tissue to appear.

But what is the relationship between the childhood and adult types of tuberculosis? Was Ranke correct when he likened tuberculosis to syphilis by speaking of primary, secondary and tertiary stages? He described the primary lesion as one resulting from first infection, and located in any part of the lung parenchyma; the secondary lesion as one developing from the primary, but located in the hilum lymph nodes, and the tertiary as one developing from the secondary but located in the lung parenchyma. Evidence has accrued to cast some doubt upon the correctness of Ranke's assumption. When tubercle bacilli first infect the lung (at any age of life) there is no immunity present and consequently the lung tissue does not have the ability to fix or hold tubercle bacilli in their place of lodgment. Therefore, many are carried to the regional lymph nodes, where they set up disease almost simultaneously with that in the lung parenchyma. The lesions resulting in the lung and hilum nodes from this first infection we now speak of as the childhood type of tuberculosis. The adult type may appear soon or years after the primary type

or it may never appear. When it does, however, its usual location is in the lung parenchyma at the level of or above a plane passed horizontally through the chest slightly below the clavicle. The remoteness of these lesions from those of the tion. Again, the initial lesion that established the partial immunity may have been elsewhere than in a lung. If this group could be added to those with demonstrable childhood tuberculosis a very high percentage of those with clinical adult type

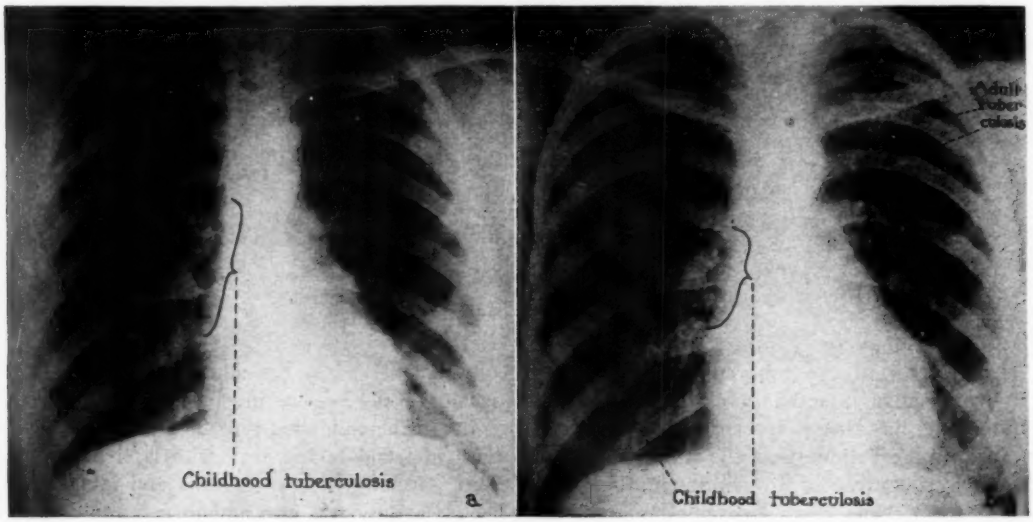


Fig. 1A. E. O., aged 17. Roentgenogram of the chest taken on April 14, 1927. Childhood tuberculosis right hilum. Cutaneous tuberculin test strongly positive. Exposed to sister who suffered from pulmonary tuberculosis and died in March, 1927.
Fig. 1B. E. O. Roentgenogram taken on December 29, 1927, of the same chest as seen in Fig. 1A. In addition to childhood tuberculosis in the region of the right hilum there is now adult tuberculosis in the apex of the left lung.

childhood type often being in the opposite lung again casts some doubt upon Ranke's assumption. The remoteness, together with the fact that in many cases that develop the adult type the exposure to tubercle bacilli through intimate contact has been continued or resumed, leads one to believe that a good percentage of cases of adult type tuberculosis are due to reinfection from exogenous sources.

In a recent study we found approximately 50 per cent of teen age girls and boys suffering from clinical adult type of tuberculosis also had definite evidence of the childhood type having existed as manifested by calcifications. The findings of Rathbun, McCain and McPhedran have been similar to ours. Therefore, it is obvious that the childhood type of tuberculosis easily demonstrated in the living precedes the adult type in approximately 50 per cent of cases. Obviously the childhood type can not always be demonstrated in the living as the calcifications may be obscured by the diaphragm, heart and other dense structures such as those composing the bony framework. Again, the lesions may be so small as to escape detection except on postmortem examination of disease would have been recruited from those ranks—perhaps a good many more than our

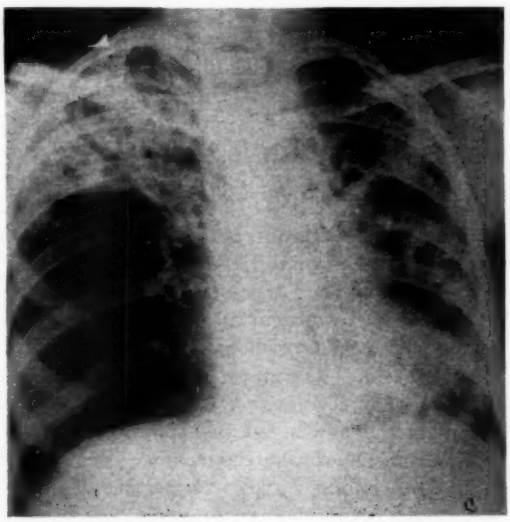

Fig. 1C. E. O. Roentgenogram taken on July 8, 1929, at the Glen Lake Sanatorium of the same chest as seen in Figs. 1A and 1B. In addition to the childhood tuberculosis in the region of the right hilum the entire left lung and the right lung to the level of the third rib are involved with adult type of tuberculosis. This patient died on August 15, 1929.

proved 50 per cent and Rathbun's estimated 75 per cent.

A second way of obtaining evidence is by watching children with the childhood type of disease over a period and actually observing the development of the adult type of disease (Figs. 1 and 2).

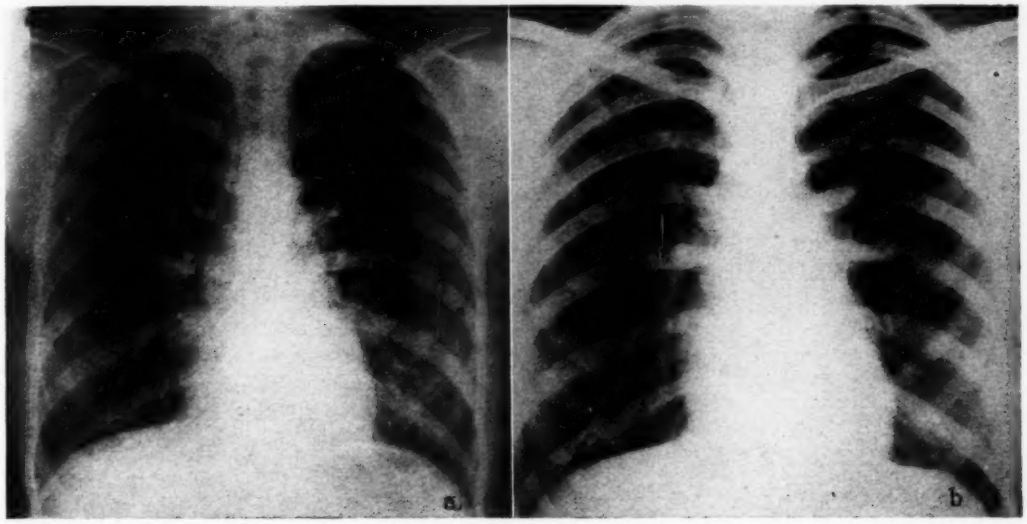

Fig. 2A. P. H., 14 years of age. Roentgenogram of the chest taken on February 16, 1926. Childhood tuberculosis right hilum. Father suffering from tuberculosis with a history of cough and expectoration since 1920. One sister died a year before this roentgenogram was made. Cutaneous tuberculin test strongly positive.

Fig. 2B. P. H. Roentgenogram of the same chest as seen in Fig. 2A, but taken on June 5, 1929. Childhood Type of tuberculosis right hilum, adult type with cavitation right upper lobe. Exposure to father has continued since roentgenogram illustrated in Fig. 2A was made.

The number of children at any age with the childhood type of tuberculosis is relatively small, but they contribute in a large way to the group in later life with the adult and killing type of tuberculosis. Therefore, such a definite relationship exists between these two types of tuberculosis that one of our great problems is to seek out the infants, children and young adults who have developed the childhood type and put forth every effort to help them avoid the development of the adult and fatal type of disease. Definite procedures to accomplish this have been tried and found effective.

That tuberculosis is a communicable disease is a well established fact. Galen once stated: "It is dangerous to live with consumptives and with those whose foul breath imparts a heavy odor to the rooms in which they lie." From the middle to the last of the eighteenth century, drastic isolation laws were enacted and enforced in Spain and Italy, so drastic, in fact, that great hardship was imposed upon not only the patients but also the physicians who neglected to report cases to the health authorities. These laws were based almost entirely upon personal opinion, for there was at that time no scientific proof that tuberculosis was contagious. One Italian physician said: "Pulmonary consumption is of such a malignant nature in our country that even after the death of the sick person there remains after him the seed of his malady hidden and unseen in many houses with serious danger to those who move into them thoughtlessly, and indeed some of this seed is so penetrating that it can be communicated even without immediate contact with the infected person or thing." One school was convinced of its contagious nature while another clung to the view that it is inherited. Since the foundation was purely a matter of personal opinion, the laws and their makers were severely criticized. As a result, many people joined the school believing in the hereditary nature of tuberculosis. Although it has been proved over and over that this school is wrong, the public today is still suffering from the influence of its teachings.

Klenke, Villemin, Cohnheim, Koch and many others have proved beyond doubt that tuberculosis is a contagious disease. The literature abounds with clinical observations and references to its contagiousness, particularly in infancy and childhood. The Brontë family, made famous by

the writings of Emily and Charlotte, was almost annihilated by this disease. All of the five children, but one, died from tuberculosis before the age of forty years. Any physician, even today, who has made a study of tuberculosis as it exists, has seen families with similar experience. Dr. L. M. Roberts of Little Falls, Minnesota, has cited the following: "The parents came from

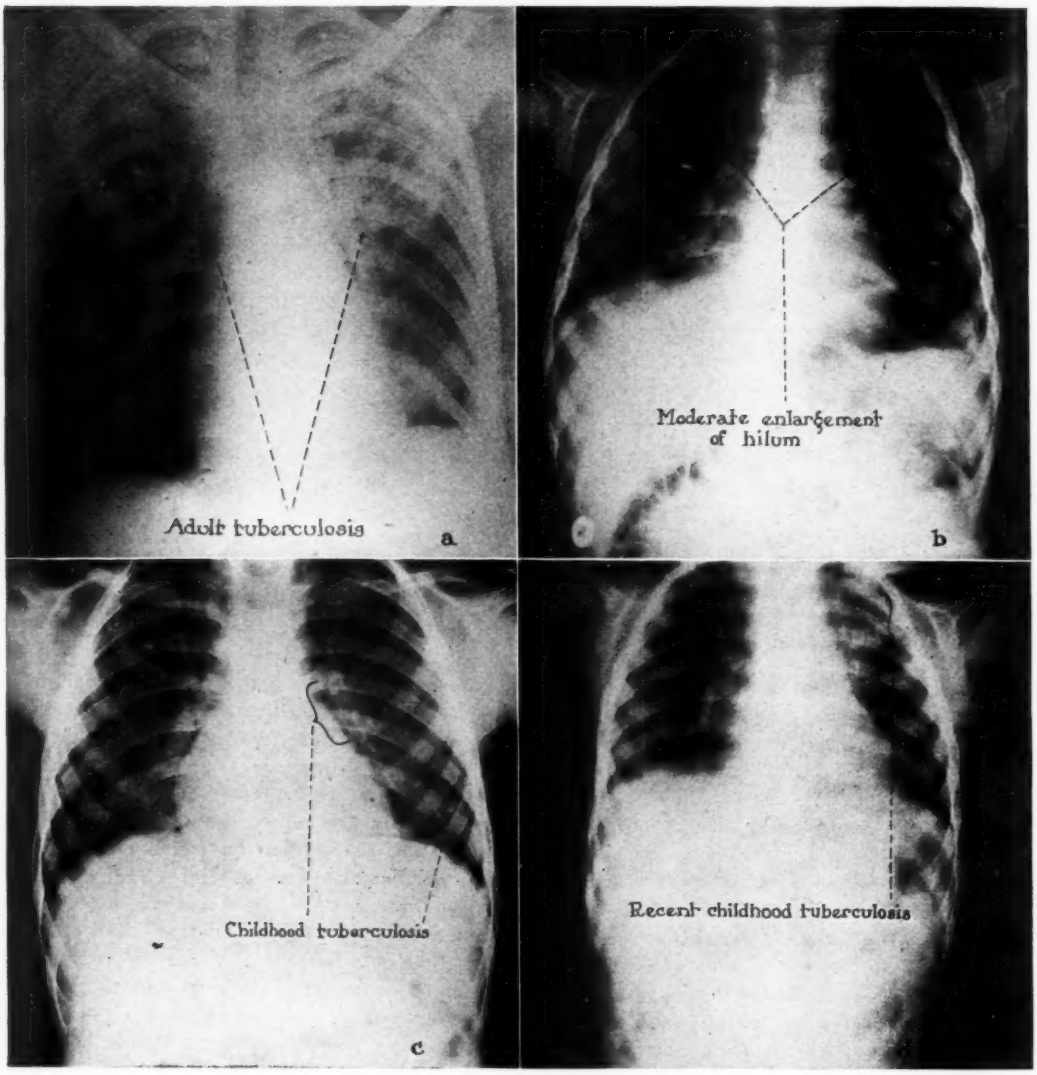


Fig. 3. Roentgenograms of four members of the same family. On April 10, 1929, the father was seen in his home. He had the appearance of one with advanced tuberculosis. It was learned that his disease was detected two years before, but in order to avoid the Health Department he moved to another city. There were three children in the home. The chest conditions of the father and the three children are seen in the illustrations as follows:

A: G. C. Father, aged 35. Roentgenogram taken in April, 1929. Advanced bilateral pulmonary tuberculosis, adult type. Recent hemorrhage. Quite ill.

B: D. C. Son. Two years of age. Roentgenogram taken on April 18, 1929. Moderate enlargement of the hilum on each side. The findings in the lungs are those usually seen in acute nontuberculous respiratory infection. Cutaneous tuberculin test strongly positive. At the time the roentgenogram was made this child had a temperature of 102°. A few days later he died of tuberculous meningitis.

C: G. C. Son. Three years of age. Roentgenogram taken on April 18, 1929. Childhood type of tuberculosis represented by primary focus in left base and calcification in left hilum. Cutaneous tuberculin test strongly positive. Apparently in good health.

D: B. C. Daughter. Age approximately one year. Roentgenogram taken on April 18, 1929. Childhood tuberculosis in the inflammatory stage, left upper lobe. Tuberculin test strongly positive. Child's general health is reasonably good.

the old country, where I am sure the mother contracted tuberculosis of the lungs. She gave birth to nine children, quite close together; one by one they died of tuberculosis, mostly very young. Only one or two passed their teens, the last to go was about twenty-six—then the father died, later the mother herslf." Lampson, Slater and Richdorf and Hetzler have called attention to the spread of tuberculous infection from one member of a family to others. In some instances as many as 100 per cent of the members of families have become infected. Over and over again, Krause has called attention to the great dangers of exposure to tuberculosis. In a scholarly work on the contagiousness of tuberculosis, Opie and McPhedran both descriptively and graphically have shown that not only tuberculous infection but also tuberculous disease is communicable.

The following cases show how tuberculous infection and disease resulting from exposure to any tuberculous member of the family may cause illness and death among other members of the family.

One case is that of a man of thirty-one years, who first reported for an examination in January, 1924. Recently his infant died from meningitis, which the physician found was tuberculous. The father was sure that his trouble was only bronchitis, although the history indicated that he had not been well for at least a year. The examination revealed advanced tuberculosis with tubercle bacilli in the sputum. After all the evidence was in, he was easily convinced of the truth and immediately gave up his work and in five weeks he was admitted to a sanatorium. He was extremely homesick, and decided to return to his home to continue treatment. Before his return home, a third child was born. A few weeks later this infant died of tuberculous meningitis. Not long after, the father died of the same disease. We have recently seen the wife and the oldest and only remaining child in the family, and although neither have any evidence of clinical tuberculosis, both react positively to tuberculin.

When tuberculosis has been detected in a family it is of great importance that good coöperation of the patient and the family be secured. In some places laws exist which, when enforced, compel the isolation of the patient. If the physician will devote time and thought to his cases and manifest much interest in them, he will in the majority of instances be able to inspire enough confidence so that all concerned are willing to coöperate with him. In the occasional family, however, it is difficult to obtain proper coöperation. Recently a mother brought three children for examination, each of whom had a marked reaction to tuberculin. A brief conversation with the mother convinced her that in all probability there is a case of tuberculosis among the children's associates. She consented to be examined and to have her husband examined, but in neither case could we find any evidence of pulmonary tuberculosis. Inquiry about other associates revealed the fact that a grandmother at one time had lymph nodes removed from her neck, and that she has coughed for years, but all attempts have failed to result in the slightest degree of coöperation from the grandmother.

A member of an orchestra had a profuse pulmonary hemorrhage while performing. When we saw him, he had extensive tuberculosis involving the greater part of the left and the upper lobe of the right lung. He stated that he had never been ill, but upon investigation we learned that two years before his case had been diagnosed in one of the free clinics in the city of Minneapolis and reported to the Health Department. The family disappeared, leaving no address, and their whereabouts was unknown to the Health authorities until the hemorrhage occurred. The examination revealed advanced tuberculosis (Fig. 3A). His mother, wife and three children were in the home, one of whom approximately two years old (Fig. 3B) had been rather drowsy for a day or so. The history of exposure and the symptoms led us to suspect tuberculous meningitis immediately. The child was sent to a hospital, where the findings were typical of tuberculous meningitis, and death resulted a few days later.

Another child of approximately three years was found to have a marked tuberculin reaction, and the examination revealed childhood tuberculosis with a primary focus in the lung parenchyma and calcification in the lung hilum on the same side (Fig. 3C). A third child of approximately one year had what appeared to be childhood tuberculosis in an active stage involving the upper lobe of the left lung (Fig. 3D). There was definite enlargement of the hilum. The mother showed a high degree of allergy, but no evidence of clinical tuberculosis. The grandmother was very thin and coughed, but refused examination. The father, who was without funds, was advised to enter an institution immediately, not only for his own sake, but for the sake of his associates, particularly his own family. He refused on the ground that he did not feel ill enough for any such treatment. We were finally able to convince him that the infant should be sent to a sanatorium. This was done, but after a few weeks in the institution the child developed pertussis. This appeared to be a rather serious complication with a recent parenchymal lesion, and after the pertussis had subsided, the *x*-ray showed extension of the disease to the entire left lung with pleural effusion on that side. The child looked ill, but recent films show considerable resolution of the parenchymal disease, and the infant's general condition is much improved. We feel that the prognosis in this case would be definitely improved if the exogenous infection could be stopped.

In March, 1924, a man of twenty-one years reported

for an examination of the chest, giving a history of having lost a sister from tuberculosis one year before. The source of her infection has not been determined. This young man was found to have moderately advanced tuberculosis and was sent to a sanatorium. He remained there for nine months and showed evidence of marked improvement, but at present his condition is critical. In December, 1925, a sister of eighteen years was brought home from college acutely ill. She had an extensive pulmonary tuberculosis, but later responded well to artificial pneumothorax. She is now working. In February, 1929, a brother of thirty-two years was examined, and found to have hopelessly advanced tuberculosis. He died in less than a year from the time his disease was detected. Of the entire family there is one sister who has remained free from tuberculosis. The source of the original infection in this family has not been determined. However, there are reasons to suspect that the father may be a chronic case of tuberculosis, although he has not submitted to examination. This and the previous cases show that sufficient cooperation to prevent the spread of infection and disease in families is often difficult to secure.

Almost every physician engaged in clinical tuberculosis work has seen a number of cases of *conjugal tuberculosis*. Galen said: "Besides there is a danger in being extremely intimate, especially in the conjugal relationship, with those who suffer from consumption." Villemin once remarked: "In the course of my practice, I have more than once been astonished to see wives begin to present the first symptoms of pulmonary phthisis in a short time after their husbands, with whom they had shared the bed up to the last moment, had succumbed to this disease."

Some authors have been inclined to believe that conjugal tuberculosis does not occur very frequently, but more recent accurate aids in diagnosis have shown that it is by no means uncommon. Arnould collected statistics on 53,069 families in each of which the wife or husband suffered from tuberculosis. In 8.43 per cent he found that both wife and husband were tuberculous. Opie and McPhedran made a study of this subject and found that in twenty-one families where tuberculosis existed in the husband or wife it also was present in the consort of ten families.

Tuberculosis may be considered in a large part as a *family disease*. Therefore, whenever a case is detected, all members of the family should be examined. When this procedure is generally practised, many cases of tuberculosis will be detected among children and adults earlier in the course of the disease than has been true in the past. Unfortunately tuberculosis may spread outside the family. In other words, so far as we know, there is no inheritance which makes only the members of the family susceptible. Other close associates are perhaps just as liable to become infected. It is also true that a person from outside the family may bring tuberculosis into the home. Over and over again we see tuberculosis developing in families who have always been free from it, and later trace the disease to a domestic who has been brought into the home. The frequent occurrence of such cases should convince us that every person being brought into our homes to live over a considerable period of time should be most carefully examined: first for tuberculous infection and second for tuberculous disease. Because of the greater prevalence of tuberculosis among Negroes and American Indians than among the white races one should be doubly sure that careful examination is made of members of these races before they are employed in homes.

*Every case should be reported to the Health Department.* It is a lamentable fact that the medical profession has not taken more pride in reporting tuberculous cases to health departments as required by law. The number first reported at the time of death is almost unbelievable. Investigation often reveals the fact that such cases have had diagnoses and have been spreaders of tubercle bacilli for months and even years. As health officer of Berkeley, California, in 1925, Dr. W. P. Shepard sent to the practitioners of medicine in Berkeley the following excellent reasons why they should report tuberculosis:

I. It is an infecious disease. It may become infectious at intervals for many years. The tuberculosis patient is notoriously fickle in his choice of medical attendance. He may remain a menace to the community for many years after numerous attending physicians have been discharged. He therefore belongs to a category with the typhoid and diphtheria carrier and becomes subject to regulation by law whenever his acts endanger the community.

II. The Health Department "stands by" in order to:

1. Assist the physician to obtain continued cooperation from his patient.
2. See that all physician's instructions to the patient are such that the community is given maximum protection.
3. Assist the physician to obtain institutional care for the patient when desired.

4. See that the patient at no time becomes a public menace whenever he is not under competent medical care.
5. See that the exposed members of the family are carefully examined and observed in the hope of detecting the secondary cases in their incipient and curable stage.

III. The Health Department in no way contemplates interference with private physicians, disturbing the patient's confidence in his physician, making any statement to the family not approved by the physician, divulging confidential matters relating to the patient, or, in fact, doing anything to which the physician who is well versed in all aspects of tuberculosis could possibly object. *Reportable cases* are those who by their clinical findings appear to be *active cases,* whether the sputum is negative or positive.

IV. Educating the public to regard tuberculosis as a community problem is a necessity. Such education can be done effectively by a public agency having reliable information on the morbidity and mortality trends in the community over a period of years. Such information can only be obtained by coöperation between physicians and the Health Department.

V. This campaign by public agencies coöperating with private physicians to teach early recognition of tuberculosis, the proper means of preventing infection, the value of sanatorium care, the importance of hygienic living has resulted in the greatest medical triumph of this generation; namely, the lowering of the tuberculosis death rate by more than one-half.

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## BICHLORIDOL

Bichloridol is a proprietary preparation of corrosive mercuric chloride suspended in a "palmitin" base, intended for intramuscular administration. It is sold in compressible ampules called collapsules. This preparation was formerly marketed by the H. A. Metz Laboratories, Inc., but is now marketed by the Duke Laboratories, Inc. In 1925 the Council on Pharmacy and Chemistry rejected Bichloridol because it was marketed with indefinite statements of composition and under a non-descriptive name. The A. M. A. Chemical Laboratory reports that it analyzed Bichloridol because of inquiries received, one inquirer writing, "One-half to one grain a week gives practically no reaction and likewise mighty little therapeutic effect." The Laboratory found the preparation to contain only from one-fifth to one-tenth of the mercuric chloride claimed. The Laboratory points out that a discrepancy of this magnitude is inexcusable and comments on the desirability of physicians confining their use of proprietary preparations to products accepted for New and Non-official Remedies. (Jour. A. M. A., December 21, 1929, p. 1971.)

## TUCKER'S ASTHMA SPECIFIC

The continued exploitation of this cocaine mixture is a standing disgrace to the federal authorities. The nostrum carries a label admitting the presence of 5 grains of cocaine to the fluid ounce. When the Commissioner of Internal Revenue was asked in 1922 how such a product could be sent without violating the Harrison Narcotic Law, his reply was that the cocaine in the remedy became hydrolyzed before it reached the public, and that when used there was either no cocaine or a very small quantity. This commissioner, at the same time, also gave a fulsome puff for the nostrum, expressing the opinion that the mail-order distribution of this product served "a great humanitarian cause" and, for that reason, the Treasury Department was taking no action. This in spite of the fact that the product obviously violates the Harrison Narcotic Law, for if it does not actually contain cocaine it admittedly contains a derivative of cocaine, to which the law also applies. Furthermore, if the product does not contain 5 grains of cocaine to the ounce, then it violates the National Food and Drugs Act. (Jour. A. M. A., December 7, 1929, p. 1829.)

# THE INCIDENCE OF TUBERCULOUS INFECTION IN SCHOOL CHILDREN*

RUSSELL H. FROST, M.D.
*Wabasha, Minnesota*

IT is a well known fact that figures once quoted to show that the majority of children of school age have become infected with the tubercle bacillus are no longer accurate; or that while they may apply in certain of the large European and American cities they do not now, if they ever have in the past, reflect with any degree of precision conditions as they exist in the average American rural or semi-rural community. No attempt will be made in this brief report to review the extensive literature on this subject, since all of us are familiar in a general way with the work of von Pirquet,[1] Hamburger and Monti,[2] Barchetti,[3] and Peiser[4] in Europe, Ferguson,[5] Armstrong,[6] Chadwick,[7] and Myers[8] in North America, as well as a host of others who found, upon the application of various cutaneous tuberculin tests, incidences of infection among children ranging from 41 to 94 per cent. One cannot but come to the conclusion, after even a cursory review of the numerous articles on the subject, that the extent of tuberculous infection among children in the various countries and cities is dependent upon a number of factors, among which must be social and living conditions in general and the amount of open tuberculosis in the community; that the amount of such infection probably varies greatly among the different social levels in the same community; and that any conclusions based upon the findings in any single city or social class and which would appear to prove that tuberculous infection is practically universal among adults are erroneous.

Unfortunately, little investigation of this sort has been carried on in Minnesota outside of the larger cities. Slater (9) in 1924 published a report of 1654 Pirquet tests made on school children in rural Southwestern Minnesota, among whom he found only 10 per cent to react positively. More recently Mattill and Fenger (10) have reported a series of 3011 Pirquets on children in rural Hennepin County, Minnesota, with positive reactors averaging 10 per cent (and 23 per cent if the questionable positives were included), these figures including several of the sizeable urban centers immediately adjoining the city of Minneapolis where Myers and his associates at the Lymanhurst School have found the incidence of positive Pirquets among school children to range between 45 per cent and 50 per cent.

TABLE I

TABULATION OF RESULTS OF VON PIRQUET TESTS

| Age | Male | | Female | | Total of All in Age Group | Positive | Negative | Per Cent Pos. |
|---|---|---|---|---|---|---|---|---|
| | Pos. | Neg. | Pos. | Neg. | | | | |
| 5 and under | 0 | 7 | 1 | 8 | 16 | 1 | 15 | 6.2 |
| 6 | 3 | 23 | 0 | 12 | 38 | 3 | 35 | 8 |
| 7 | 2 | 14 | 4 | 21 | 41 | 6 | 35 | 14.6 |
| 8 | 3 | 12 | 3 | 13 | 31 | 6 | 25 | 19.3 |
| 9 | 4 | 21 | 4 | 22 | 51 | 8 | 43 | 15.7 |
| 10 | 4 | 14 | 8 | 16 | 42 | 12 | 30 | 28.5 |
| 11 | 6 | 14 | 4 | 11 | 35 | 10 | 25 | 28.6 |
| 12 | 8 | 8 | 3 | 20 | 39 | 11 | 28 | 28.2 |
| 13 | 8 | 11 | 8 | 12 | 39 | 16 | 23 | 41 |
| 14 | 3 | 16 | 7 | 17 | 43 | 10 | 33 | 23.2 |
| 15 | 6 | 10 | 5 | 23 | 44 | 11 | 33 | 25 |
| 16 | 2 | 13 | 3 | 9 | 27 | 5 | 22 | 18.5 |
| 17 | 2 | 5 | 6 | 14 | 27 | 8 | 19 | 30 |
| 18, 19 and 20 | 0 | 4 | 1 | 4 | 9 | 1 | 8 | 11.1 |
| Total | 51 | 172 | 57 | 202 | 482 | 108 | 374 | 22.4% |

This report gives the findings in 482 children in the public and parochial schools of Wabasha, Minnesota, a community of approximately 2500 persons. During the past school year the work was initiated by sending to the parents of each child a questionnaire asking for information about such of the child's past illnesses as might have a bearing upon the present problem and about a history of possible or actual exposure to open cases of tuberculosis. A check of the answers thus obtained showed that about the only reliable information secured was the child's name and age. In so many proved instances parents refused to admit that there had been cases of open tuberculosis in their families or homes that any attempt to correlate incidence of tuberculous infection with history of exposure had to be abandoned. The 482 children examined consti-

*Read before the sixty-first annual meeting of the Wabasha County Medical Society, Wabasha, Minnesota, July 11, 1929.

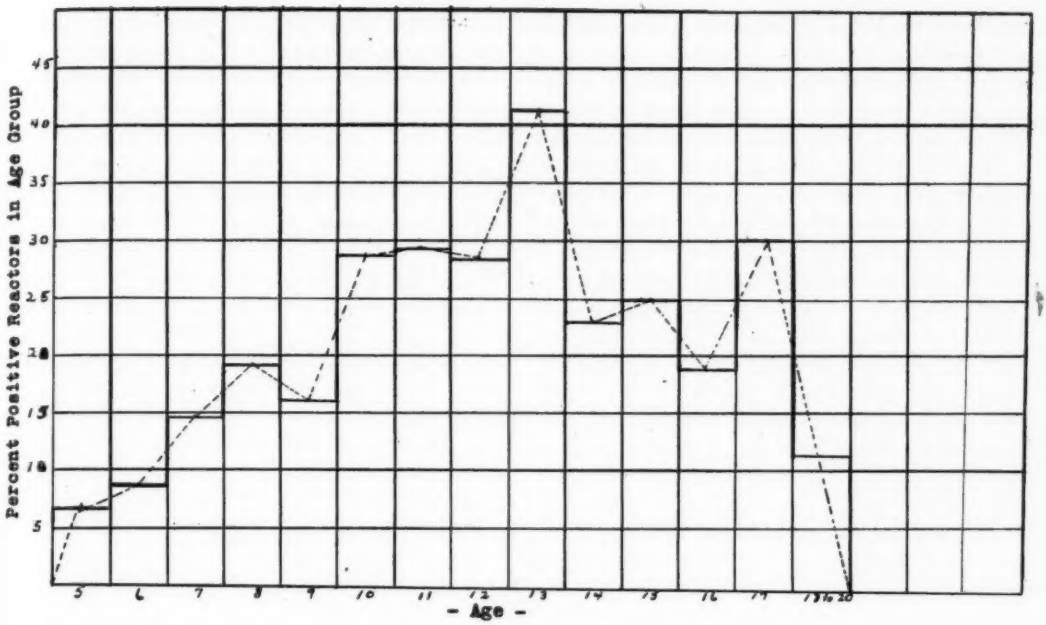


Fig. 1. Von Pirquet tests.

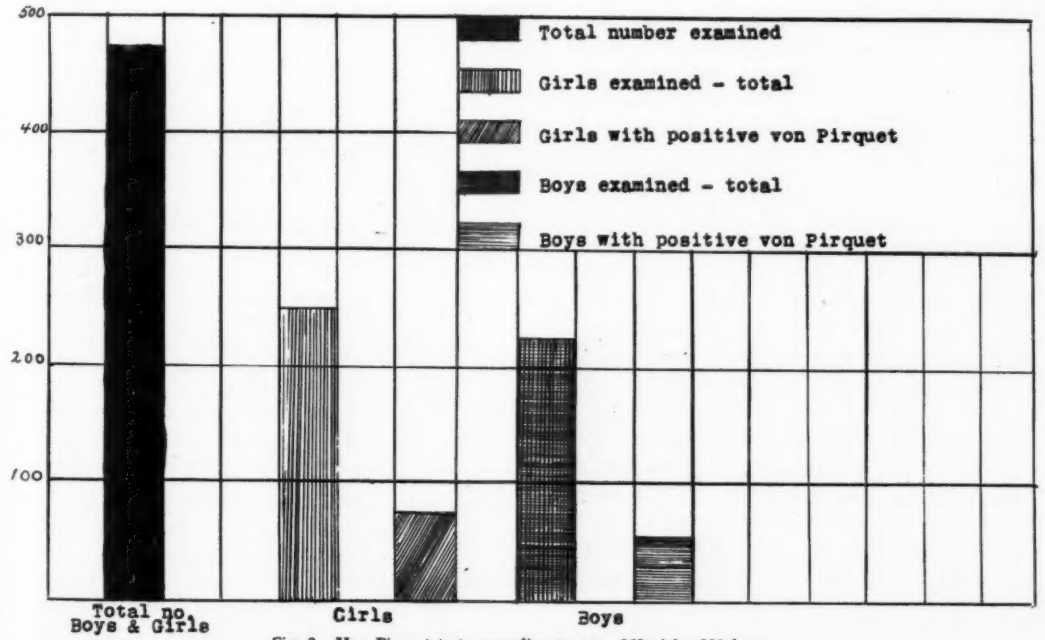


Fig. 2. Von Pirquet tests according to sex—259 girls; 223 boys

tuted approximately 80 per cent of the combined enrollment of the city's two school systems. A single von Pirquet test, read in forty-eight hours, was applied to each child, using the ordinary von Pirquet scarifier and full strength human O.T. of proved potency obtained from the Trudeau Laboratory at Saranac Lake, N. Y. I am aware that the results thus obtained can justifiably be criticized on the grounds that the von Pirquet at its best is only about 85 per cent accurate (11); that it would have been better to apply the graduated Mantoux or intracutaneous test with both human and bovine tuberculin; and that a certain small percentage of the negative reactors would have reacted positively had another von Pirquet been later applied. For various reasons, however, neither of these latter procedures was feasible, and it was felt that the results which were obtained and analyzed were sufficiently accurate for purposes of comparison with those obtained elsewhere, since in most other similar series approximately the same method of examination was employed. No effort was made to grade the positive reactions as mild, moderate or severe as is sometimes done; however, no reaction was regarded as positive unless there was at least a palpable red infiltration 5 mm. in diameter at the site of inoculation.

Of the 482 children examined, 223 were boys and 259 were girls. Their ages ranged from 5 to 20 years and the number of individuals in each age group was fairly uniform with the exception of the very youngest and very oldest. Of the total number 22.4 per cent reacted positively, these being remarkably uniformly distributed between boys and girls, 22.8 and 22 per cent respectively.

In common with many of the published reports of this nature and as will be seen in the table and shown graphically in the charts, the percentage of positive reactions rises fairly uniformly from 6+ in age group 5 to a peak of 41 per cent in age group 13, and then declines somewhat less consistently in the later age groups. Beyond the fact that one is unwarranted in making generalizations based upon a relatively small series of cases, with the errors inevitably attendant upon such an attempt, I can offer no explanation for this decline in the age groups from fourteen years on unless it be, as has often been suggested, that the skin hypersensitiveness to tuberculin in persons receiving a relatively slight infection very early in life tends to disappear as the primary tuberculous focus absorbs or calcifies with the passing of years or becomes more and more firmly invested with impenetrable layers of fibrous tissue.

It is hoped at a later time to incorporate with this preliminary report the findings after *x*-ray of the chests of the positive reactors in this group of children in order to determine the incidence of demonstrable roentgenographic evidence of primary pulmonary tuberculous infection, juvenile or hilum tuberculosis in the younger individuals, and adult type pulmonary tuberculous disease in those who are approaching maturity.

REFERENCES

1. von Pirquet, C.: Frequency of tuberculosis in childhood. Jour. Am. Med. Assn., 52:695, 1909.
2. Hamburger, F., and Monti, R.: Die Tuberkulosehäufigkeit im Kindesalter. München med. Wchnschr., 56:449, 1909.
3. Barchetti, K.: Zur Häufigkeit der Tuberkulose im Kindesalter. Arch. f. Kindhk., 71:180, 1922.
4. Peiser, J.: Über die Tuberkulose des Schulkindes. Jahrbuch f. Kinderhk., 3:129, 1923.
5. Ferguson, R. G.: A tuberculosis survey of 1346 school children in Saskatchewan. Jour. Outdoor Life, 19:260, 1922.
6. Armstrong, D. B.: The Framingham demonstration. The Pirquet survey. Bull. Nat. Tuberc. Assoc., Vol. 5, No. 4, (Jan.) 1919.
7. Chadwick, H. D.: The *x*-ray and clinical diagnosis of tuberculosis in children. Am. Rev. Tuberc., 17:318, 1928.
8. Myers, J. A. et al: Studies on tuberculosis in infancy and childhood. Am. Rev. Tuberc., 11:375, 1925.
9. Slater, S. A.: The results of Pirquet tuberculin tests on 1654 children in a rural community in Minnesota. Amer. Rev. Tuberc., 10:299, 1924.
10. Mattill, P. M., and Fenger, E. P. K.: Tuberculous infection in school children as shown by the von Pirquet test. Read before the clinical section of the twenty-fifth annual meeting of the National Tuberculosis Association, Atlantic City, N. J., May 30, 1929.
11. Cunningham, A. R., and Ratcliffe, A. R.: The tubercular infection in childhood. Boston Med. and Surg. Jour., 187:691, 1922.

Buena Vista Sanatorium.

# THE TEACHINGS OF MEDICAL EXPERIENCE*

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THIS talk is directed to the young men upon the benches before me. Those veteran practitioners who may listen will travel in their mind's eye over the trying situations in their years of past experiences. To them it will be a recital of the lessons learned out of the practice of the healing art.

Efforts made to guide the young practitioner in a safe course of conduct fail to take into account the fact that a large part of his work will consist in the care of functional ailments for which there is no known pathology. A lack of training in the art of medicine causes him to flounder about in a sea of uncertainties which in the early years prove to be very costly. If a few of these errors can be avoided some gain will result. I know you will pardon personal references to my own work which can not be well avoided in illustration of the points which I wish to emphasize.

We are not all moulded of a like personality. Some of us by nature have a large amount of patience, others are of more irritable temperament. Some of us radiate hope and good cheer, others are more serious or fail to inspire our patients with a sense of reassurance.

The young man of irritable temper must overcome it if he would succeed. Pain and sickness produce a profound effect upon the human organism. Bodily functions are altered, internal secretions modified, sleep disturbed. The sick man or woman is on edge nervously. Tranquility of spirit is a golden asset in the face of such a situation. If possessed by nature, the young doctor is fortunate indeed; if not, it must be acquired by rigid discipline. Knowledge of disease in all its varying aspects is important to know but does not by any means fit a man for practice. Sick people are self-centered and serious about their ailments. They rely completely upon their medical advisor. He must be a patient, resourceful man, able to meet the varying demands made for relief from fancied as well as organic ills. He must be able not only to intelligently prescribe drugs or other therapeutic measures but must give out of his own self that reassurance that comfort of mind required of all those engaged in the care of the sick.

One of the first lessons which a young man must learn is to avoid dogmatic statements relative to the prognosis of disease. Some patients apparently going down to death ultimately recover; others apparently affected with a mild sickness die unexpectedly. Many years ago when I first began the practice of medicine I had an experience which I shall never forget. A nurse about forty years of age was down with lobar pneumonia. She was in the hands of a very skillful man. A number of consultants had seen her. In a state of deep coma for days with high fever, deep cyanosis and no expectoration, a fatal prognosis was made. The friends and others were awaiting her death. To the surprise of us all she refused to die and after a fearful struggle recovered. It does not add to a man's professional reputation to make a fatal prognosis and have the patient survive.

Where the diagnosis is established or highly probable do not hesitate to express your opinion as to the outcome, always, however, with the qualifying statement that "experience is fallacious and judgment difficult." Many times in such a situation "Silence is golden." On the other hand, to say nothing to enquiring friends when the situation demands an opinion is a sign of lack of self-confidence and an evidence of weakness. Sometimes it is better to be wrong and be positive rather than to be right and say nothing. It is important to sense the situation.

When pressed for a diagnosis where a definite conclusion can not be arrived at, state that more time and study are required. Do not say you do not know. An older man whose reputation has been established in the community can admit his ignorance. Not so a young practitioner. A diagnosis is usually an opinion. It is rarely proven beyond some doubt. In an obscure case where a conclusion is difficult seek time for further investigation. The best rule of good prac-

*A Talk delivered before the Medical Alumni Association of the University of Minnesota.

tice is to investigate and again seek more evidence.

The course of certain diseases is very difficult to interpret. One of these is lobar pneumonia. It is very treacherous. I have learned never to give a positive opinion as to the outcome in a given case. Two personal experiences have taught this lesson. Some years ago while studying in Vienna, I was assigned to examine a young man propped up in bed, rather cyanotic, breathing with an effort and rapidly. A cursory examination revealed lobar pneumonia of the left upper lobe. His pulse was regular, he was rational and his heart sounds were good. Having finished the examination I sat down on the edge of the bed and started talking with a doctor examining a case next to mine. Suddenly I felt a sort of tremor in the bed and looking at my patient saw him with his head back, pupils dilated and an ashen gray color over his face. He was dying. So sudden had been his death that a sandwich which he had been eating was still in his fingers and some of the bread in his mouth. Examination of his heart five minutes prior to death gave no inkling of the fatal outcome. Not many years ago while on a consultation in South Dakota I examined a large robust man about fifty-five years of age with lobar pneumonia. He was a very sick man but his heart tones were of good quality and there was no irregularity. I saw no sign of approaching death. After finishing the clinical study I stepped out of the house, walked about half a block up the street when the nurse came running toward me saying, "come quick, Doctor, the man is dying." Sure enough, on my return, not five minutes after I had examined him and found no signs of a failing heart, he was dead.

If the patient has a fatal malady it is not good practice to tell the patient himself but make known his condition to some discreet member of his family. No more difficult situation arises in the sick room than to face day after day a conscious patient suffering with an incurable disease who is going to die and knows it himself. The atmosphere is intolerable. In the face of death, instill a fighting spirit in the patient and let him go down with his colors flying. Not long ago a man with an incurable abscess of the liver and thrombophlebitis lay dying. His wife came to me and said, "Now, Doctor, my husband is going to die. What is the use of all these measures of treatment which you doctors are carrying on. Why not let him die in peace." "Yes," I said, "we think he is going to die but he is perfectly rational and if we relax our efforts he will be quick to interpret that we have given up hope. Let us give him courage to face death," and we did. He went to the end fighting like the good soldier that he was.

On the other hand patients at death's door and unconscious of their fate have a right to die in peace. Futile attempts at keeping them alive by various forms of medication are not justified. Put the dying patient in the arms of Morpheus with a hypodermic of morphine and let him sleep out his existence. It relieves the patient of suffering and calms the relatives in the presence of death.

Do not be too anxious to state your opinion of the nature of a case unless pressed for your conclusion. Delay in stating a diagnosis often saves mistakes, the later course of the disease changing one's opinion. In every case acquire the habit of painstaking investigation. Gerhardt's words should not be forgotten, "Die frucht der Heilung wachts am Baume der Erkentniss. Ohne Diagnostik Keine vernünftige Therapie. Erst untersuchen dann urteilen dann helfen."

When all the clinical evidence points to a diagnosis which seems correct beyond doubt, but is reached by little investigation and an easy course of reasoning, be cautious about stating your conclusion too positively. Many apparently certain diagnoses prove at the operating or autopsy table to be wrong. As a rule the more carefully you have investigated all features of your case the more nearly correct will be your conclusions.

The signs of the certain approach of death are sometimes very difficult to interpret. It is a good rule to be very slow in making a dogmatic statement when faced with such a decision. Not long ago I had this experience. A very sick man with a chronic ailment was suddenly seized with what appeared to be an acute heart failure. He was unconscious, eyes turned back in his head, pupils widely dilated, face ashen gray color, whole body deeply cyanosed, no pulse at the wrist, heart sounds could not be detected with the stethoscope. To all appearances he was dying. The family was summoned to the bed side and informed of approaching death but the patient did not die. After some stimulation the heart began beating, the pulse returned, consciousness

was restored and he lived on for three weeks more, to the chagrin of his medical attendant and the disturbed mental state of his family.

I have learned not to ask for an autopsy in a fatal case, by telephone or proxy. If you want it badly make your request in person. You are the attending physician and friends will often grant a request from you which would be refused another.

Never talk to friends about an autopsy in an apparently fatal case prior to death. It makes a bad impression. Wait until the patient is gone; then ask for the postmortem examination.

Always secure an autopsy when it is possible. It is the best way to learn clinical medicine. A well performed postmortem always reveals valuable lessons not to be forgotten. One learns most by his mistakes. Some men prefer not to know them; not so the careful clinician.

In a difficult case court consultation. The family is reassured and often a new viewpoint is revealed and valuable therapeutic suggestions brought out. No man has experience enough or knowledge enough to know everything in medicine. The more experience one accumulates the more humble he becomes and the less he thinks he knows.

Where a difference of opinion occurs between the man in attendance on the case and the consultant, the attending clinician should weigh carefully the reasons for the consultant's opinion but should not necessarily follow the advice given if his own judgment dictates otherwise. The responsibility for the outcome of the case rests on the attending man's shoulders. Often times the medical attendant in close touch with the case who has followed its course from day to day has the better judgment. Not long ago in a severe heart case such a difference of opinion arose. The attending man demurred at the advice given by the consultant. However, he gave way to the consultant's supposedly better skill and experience. The result was disastrous to the patient.

The atmosphere of the sick room should always be hopeful. There is enough anxiety on the part of relatives without adding to it with a long face. On the other hand good judgment must be shown in not assuming too frivolous or joking an attitude in the face of a grave situation. In these situations good common sense should be shown.

In dealing with people harboring chronic ailments much resourcefulness must be called into play. The profession has been slow to teach its young men the best methods of procedure when dealing with such diseases. Altogether too much emphasis in medical instruction has been placed upon the management of acute diseases. A doctor should as a rule take the attitude of an advisor or counselor rather than a policeman or sheriff.

Sick men or women can be reasoned into a course of action but rarely forced or driven into it. Place some responsibility upon the patient himself. It is his body. If he does not heed your advice he is the one to suffer. Put to him in this light he will often acquiesce where otherwise he would rebel.

Attention to details in instructions to patients is very important. Here many men young and old fail. All bedside orders should be in writing. It is your protection, impresses the patient with their importance, tends to make instructions more specific and avoids confusion or misunderstanding on the part of nurses.

Carefully recorded notes upon the findings of your cases, not only the primary examination but also the subsequent visits should always be kept. Nothing impresses a patient more than a good record of his case kept on file and referred to whenever he consults you. No man has a sufficiently retentative memory to carry the details of complaints and findings. To ask patients from visit to visit for a recital of their aches and pains, medicine taken, etc., consumes time and impresses badly the sick man or woman.

Do not waste time in idle gossip in the sick room. So soon as you have finished your examination and written your orders leave the patient with some cheering word of hope and comfort.

I have seen a doctor enter a house and without any solicitous inquiry concerning his patient start a discussion relative to the model of his latest automobile or the coming football game. Your first consideration should always be the condition of the sick person. Has the patient had a good night? How high did the fever range? Was the pain better or worse? Your time is too valuable. You have too many other sick people to visit to bother about unimportant things in the presence of suffering and death.

Perfect your knowledge in the natural course of disease. Both operative and medical treat-

ment is overestimated. It is astonishing how well many sick people will get on if they are left alone and not fussed with too much. The old rule in rhetoric applies to therapeutics "Be not the first by which the new is tried nor yet the last to lay the old aside." It takes a long time to establish the value of a therapeutic procedure or a scientific truth. In our reasoning we as scientific men must not lose sight of the rules governing scientific evidence. Remember that many diseases are self-limited. Our zeal to treat disease functionally often leads us to lose sight of the known organic pathology of many ailments worked out over years or centuries of painstaking observation.

In the hope that some of you young men may profit thereby I have opened up the book of my experience and turned some of its leaves. Great progress has been made in the control and cure of disease in the third of a century just passed. It is a work of which all medical men can be justly proud. We must, however, sit humbly at the feet of the Goddess of our science when we remember our failures to conquer cancer in its various forms, tuberculosis, pneumonia, nephritis, rheumatic fever, scarlet fever, chorea, septicemia, erysipelas, influenza, whooping cough, measles, leukemia, and a host of other diseases which suffering humanity is called upon to face. These stand as a challenge to the present generation of physicians.

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## ZONITE DECLARED MISBRANDED

Zonite is another of the many hypochlorite preparations which arose from the work of Carrel and Dakin during the war. It has been advertised like a typical "patent medicine" under the firm name of the Zonite Products Co. The propaganda for Zonite is, in effect, capitalization on the work of Carrel, Dakin and others, and the method of exploitation has been that typical of the nostrum business. Chemically, Zonite, after dilution with equal parts of water, is claimed to be essentially the same as surgical solution of chlorinated soda. According to a recent notice of judgment, Zonite was declared misbranded in that certain statements were false and misleading. Zonite has been exploited to both the physician and the public. It goes without saying that it has not been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Nonofficial Remedies. (Jour. A. M. A., December 7, 1929, p. 1830.)

## THE HAZARD OF USING NONACCEPTED DRUGS

Recently the A. M. A. Chemical Laboratory published a report on Bichloridol collapsules indicating that only from one tenth to one fifth of the amount of mercuric chloride claimed to be present was actually discovered. The results of the A. M. A. Chemical Laboratory has received independent confirmation. Apparently most of the mercuric chloride had reacted with the lining of the collapsule and was not in the medicament itself. This product has been administered to patients by physicians who thought that they were giving a certain dosage of mercuric chloride, whereas the patient received only from one tenth to one fifth of the dose he should have had. In 1925, the Council on Pharmacy and Chemistry declared Bichloridol nonacceptable for New and Nonofficial Remedies. It is safer to follow the Council! (Jour. A. M. A., February 22, 1930, p. 563.)

# THE USE OF BARBITURIC ACIDS, ACETYLENE, SPINAL ANESTHESIA, TRIBROMETHYL ALCOHOL AND OTHER ANESTHETICS IN THE MAYO CLINIC IN 1929*

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THIS is the fifth of a series of articles,[2, 3, 4, 5] dealing with results from the use of various anesthetic agents as they have been used in The Mayo Clinic through each of the five years.

The data presented in Tables 1 and 2 will be referred to briefly and in the same manner as those employed in 1927 and 1928. I would point out that Table 1 is arranged from a slightly different standpoint than that adopted in the arrangement of Table 2. In Table 1, the total of the percentages for the respective years is 100. The percentages in Table 2 total more than 100 for the reason that in some cases several agents, such as a local anesthetic, one of the barbituric acids, and inhalation anesthetics were used during a single operation. A single case, in Table 2, therefore, must be included under several headings.

TABLE 1

ALL AGENTS OR METHODS USED (EACH FIGURE IN THE TABLE REPRESENTS THE NUMBER OF INDIVIDUAL CASES FOR THE YEAR DIVIDED BY THE TOTAL NUMBER OF CASES FOR THE YEAR)

| Agents | 1929 Per cent | 1928 Per cent |
|---|---|---|
| Local* | 36.2 | 40.39 |
| Local and ether | 0.18 | 0.26 |
| Local and gases† | 8.0 | 9.96 |
| Spinal‡ | 5.19 | 1.21 |
| Ether (semi-open drop method) | 15.2 | 16.75 |
| Gases† | 31.0 | 30.13 |
| Ethyl chloride† | 0.71 | 0.73 |
| Oil-ether colonic | 0.57 | 0.58 |
| Acetylene | 0.22 | 0.06 |
| Barbituric acids | 3.04 | |
| Tribromethyl alcohol | 0.06 | |

*Includes the local anesthetic used for extraction of teeth, thyroidectomy, tonsillectomy, hemorrhoidectomy, and so forth.
†With or without ether.
‡With or without general anesthesia.

## LOCAL ANESTHESIA

The data show a decrease in the percentage of patients to whom local anesthetics were given. However, this decrease has been principally in the number of cases in which infiltration anesthesia has been accomplished by the surgeon or his assistant, mostly for minor surgical operations. There was also a slight decrease in the number of cases in which local and general anesthesia were intentionaly or necessarily combined. On the other hand, there was a considerable increase in the use of spinal anesthesia; it was used more than four times as frequently in 1929 as in 1928. This form of anesthesia was used by many surgeons rather than by a few. A factor contributing to the more extensive use of spinal anesthesia was its wide use in urologic cases for a period of six or seven months of the year. However, the conclusion was reached that it was not applicable as a routine measure and that henceforth it would be used only when indicated.

Spinal anesthesia continues to remain popular for preparing patients for operations for lesions of the large bowel. The majority of such patients is given this type of anesthetic unless there is a contraindication to its use; the principal contraindication is hypotension for frequently they are debilitated. The use of ephedrine, prior to the administration of spinal anesthesia, has been continued throughout the year with considerable satisfaction. I believe that ephedrine is valuable as a means of offsetting the fall in blood pressure which may accompany spinal anesthesia. Therefore, I feel that in the average patient with an average blood pressure, ephedrine sulphate,

TABLE 2

AGENTS OF SPECIAL INTEREST (PERCENTAGE OF CASES IN WHICH CERTAIN ANESTHETIC AGENTS OR METHODS WERE USED, BOTH ALONE AND IN COMBINATION WITH OTHERS)

| Agent | 1929 Per cent | 1928 Per cent |
|---|---|---|
| Local | 49.9 | 51.8 |
| Ether | 43.6 | 44.6 |
| Ethylene | 27.2 | 30.9 |
| Nitrous oxide | 34.0 | 27.9 |
| Carbon dioxide* | 39.4 | 32.5 |
| Acetylene | 0.22 | 0.06 |
| Barbituric acids | 3.04 | |
| Tribromethyl alcohol | 0.06 | |

*Used as a respiratory stimulant only.

*From the Section on Anesthesia, The Mayo Clinic, Rochester, Minnesota. Read before the Ramsey County Medical Society, St. Paul, Minnesota, February 5, 1930.

0.050 gm., should be given subcutaneously about ten or fifteen minutes prior to the administration of a moderate dose of procaine hydrochloride introduced subdurally. I believe that if the blood pressure is in the neighborhood of 100 mm. of mercury, systolic, the ephedrine should be given twenty minutes before the spinal injection is begun and that a spinal anesthetic should not be given unless there is some evidence that the patient can respond to a drug which will raise blood pressure. In patients with hypertension, when the blood pressure is 160 mm. or more, systolic, the hypodermic injection of ephedrine is delayed until the procaine has been placed subdurally, and the effect of the procaine is apparent (sensation of heat or of numbness in the feet). Obviously, the important factor, when a patient has hypertension, is to delay giving the ephedrine, with its effect of elevating the blood pressure, until it is certain that anesthesia can be produced with the procaine. There is always the possibility that one cannot make a proper subdural deposit of the procaine.

Toward the end of 1929 there was an increasing tendency toward the use of spinal anesthesia in certain operations in the upper part of the abdomen, especially operations on the gallbladder and its ducts. I had felt that untoward reactions were occurring less frequently in 1928 than previously and that the severity of these reactions had decreased, and I had hoped in 1929 to find some satisfactory means of increasing the duration of anesthesia without increasing the number and severity of untoward reactions. At present, I believe that one is not justified in using, in the average case, a larger dose of procaine than is considered to be a safe one after the various factors by which the dosage is determined have been taken into consideration. I consider, therefore, that in estimating the dose to be used, one should not often exceed a dose of 0.001 gm. of procaine for each pound of body weight, and should not exceed 0.150 to 0.30 gm. for any patient. I have seldom exceeded a dose of 0.20 gm. and then seldom have seen any special untoward result. Nevertheless, since all anesthetic agents have the power to destroy life as well as to produce anesthesia, I think it wiser to use a moderate dose of procaine, and, if necessary, to combine procaine with some other anesthetic agent (combined anesthesia). In debilitated or old patients, patients with hypotension, with heart disease, with recent extreme loss of weight or decreased respiratory surface or patients with several types of infection, even as much as the usual dose might be contraindicated. In such cases I feel that not more than 0.10 gm. of procaine will prove to be a safer dose. I believe that it is often especially valuable to give morphine sulphate, grain ¼ (0.016 gm.) subcutaneously and sodium *iso*-amylethyl barbituric acid, grains 6 to 9 (0.40 to 0.50 gm.) by mouth as preliminary medication. In this way it is possible to produce anesthesia with smaller doses of procaine administered subdurally than when less preliminary medication has been used.

Although I have frequently attempted to obtain ampules of procaine with some type of nonremovable indicator showing the number of milligrams of procaine contained in the ampule, I am told by manufacturers that this cannot be done. Therefore, in order to avoid error after the labels have been removed from the ampules during the process of sterilization, I have found it desirable to use an ampule holder. The ampule holder bears a mark which indicates the number of milligrams of procaine in the ampule. This eliminates the possibility of giving an overdose by using the wrong ampule (Fig. 1). On the tray the nurse places three holders which contain, respectively, one ampule containing 0.10 gm., one containing 0.120 gm. and one containing 0.150 gm. Moreover, the ampule may become slippery, and the holder prevents its being dropped.

A second point of importance in the application of spinal anesthesia, after the dose has been determined, is the technic to be followed in the administration of the anesthetic. The method employed in the last year has produced rather satisfactory results. I believe that it is a good technic for institutional use, and especially when one may wish to direct another in the administration of a spinal anesthetic. For example, a surgeon should be able to direct his assistants in the manner in which the anesthetic is to be given. He may even wish to give directions verbally or by letter. I feel that if an exact technic such as I shall describe could be followed by several groups, comparison could then be made at the termination of the year which would point out the important factors in obtaining spinal anesthesia without untoward reaction.

There are four important factors in the administration of a spinal anesthetic: 1. The site of injection may be (a) between the second and

third lumbar vertebræ for operations in the upper part of the abdomen; (b) between the third and fourth lumbar vertebræ for operations in the lower part of the abdomen; (c) between the fourth and fifth lumbar vertebræ for operations on the perineum and lower extremities. 2. I have already explained how I estimate the dose. 3. The amount of spinal fluid to be withdrawn

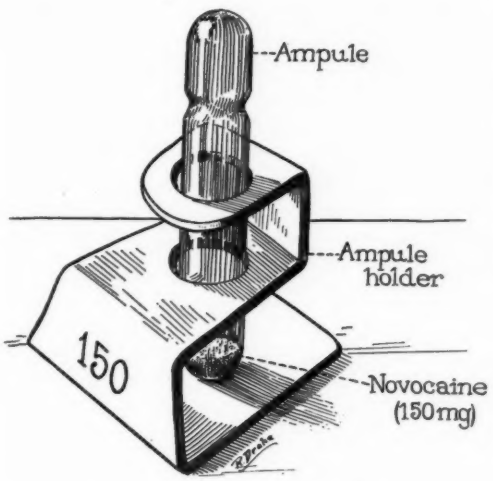


Fig. 1. Ampule holder holding ampule of procaine. The figure on the ampule holder indicates in milligrams the weight of procaine in the ampule.

and in which the crystals of procaine will be dissolved and then reintroduced will vary with different regions. I find that for most operations in the lower half of the abdomen, especially those in the urinary bladder or those in which penetration through the urinary bladder is necessary, withdrawal of about 3 c.c. of spinal fluid is sufficient. For operations on the colon withdrawal of 4 to 5 c.c. is satisfactory. For operations on the gallbladder and its ducts withdrawal of about 6 to 7 c.c. of fluid is sufficient. For operations on the stomach it is best to withdraw from 7 to 8 c.c. 4. The speed with which the fluid is to be injected is important. I believe that the most satisfactory results from procaine are obtained by injecting 1 c.c. of fluid every two seconds if the spinal fluid aspirates freely. In other words, injection of 4 c.c. of fluid will be accomplished in eight seconds.

From what has been said concerning dose and withdrawal of spinal fluid, the following facts can be deduced: 1. Exclusive of differences dependent on the intervertebral space that is used for injection, the level of the anesthetized space will be relatively high if a relatively large volume of spinal fluid is withdrawn, used as a solvent for the anesthetic drug and then reinjected; relatively low, if the volume of spinal fluid employed is relatively small. 2. For operations of average length, the dose will vary directly with the size and tolerance of the patient.

I am still very much impressed with the value of giving oxygen or a mixture of oxygen and carbon dioxide to patients in whom untoward reactions seem to be developing. It is decidedly advantageous in controlling nausea and vomiting regardless of whether or not untoward reaction is apparent. I consider that we have obtained satisfactory results from the use of spinal anesthesia. A detailed account of many of its uses has been prepared.[9, 10]

Combined anesthesia has been decreasing somewhat in popularity for the last four years. I believe this to be due to the interest which has been shown in the use of these new anesthetic agents. However, the probable ultimate outcome of the use of these new anesthetics will be a tendency to revive the popularity of combined anesthesia. These new agents will be used as part of the preliminary medication in preparing patients for operation. It seems that their most logical use is in balanced anesthesia.

### ETHER (SEMI-OPEN DROP METHOD)

The usual annual decrease of about 1 per cent in the number of cases in which ether has been administered by the semi-open drop method, continues to be evident in the data for 1929. I believe that this decrease is due to the employment of new anesthetics, the use of which was begun in 1929. This small annual decrease will be especially interesting to those who had expected the use of ether by this method to be short-lived. There is, however, one outstanding drawback in the gradual abandonment of this method. Namely, if the popularity of this method decreases, anesthetists will become less skillful in its use and it is probably the safest method of producing anesthesia in the hands of the average anesthetist. At least, one often feels justified in using it when there might be a question con-

cerning the advisability of using other general anesthetic agents.

### OIL-ETHER COLONIC ANESTHESIA

Oil-ether colonic anesthesia is now used only in obstetric cases and then only when it seems to be particularly indicated. It has been almost entirely replaced by the intratracheal method in surgical operations.

### ETHYL CHLORIDE

Ethyl chloride, as an inhalation anesthetic, is used occasionally and almost entirely for induction to ether. Recent reports of its unsatisfactory use elsewhere has interfered with its popularity at the clinic. However, in my experience, satisfactory results have been obtained with it.

### INTRATRACHEAL ANESTHESIA

From the standpoint of the anesthetist, intratracheal anesthesia is one of the most desirable methods. Personally, I am impressed with its advantages and hope to see it used more extensively in general surgery. In 1929, as well as during 1928, it was used almost entirely for operations on the head, neck or thorax.

During 1929 I used the two-catheter technic. The anesthetic vapor was insufflated through a small catheter and was exhaled through a larger catheter. The larger catheter was connected by a rubber hose to a rebreathing bag, and satisfactory anesthesia resulted in almost every case. In cases in which operation was to be done on the nose, and the operation permitted, catheters were passed through the mouth. When operation was to be done on the mouth or lower lip, the catheters were passed through the nose. In 1930 I hope in some cases to be able to utilize a single large catheter with an inflatable cuff by means of which the parts of the trachea about the catheter may be entirely closed off. This is desirable from the standpoint of excluding air from the anesthetic mixture and preventing aspiration of mucus.

### CARBON DIOXIDE

Carbon dioxide continues to be a valuable asset, and the consensus of opinion of anesthetists at the clinic is that carbon dioxide should be available whenever an anesthetic is being administered. I also have found mixtures of carbon dioxide and oxygen to be of great benefit in attempting to control hiccough which had become persistent, both in surgical and in nonsurgical cases.

### NITROUS OXIDE

Nitrous oxide continues its rather spectacular return to popularity. However, in many instances it is used only for induction, and at the termination of administration of ethylene. Nevertheless, I am finding that since carbon dioxide is available, ethylene is less necessary.

When intratracheal anesthesia is being used it is my custom to use nitrous oxide and oxygen as a vehicle for ether unless cautery or diathermy is being used in close proximity to the vapor, in which case ether is not used. Future changes in the popularity of nitrous oxide depend on the fear of explosion with ethylene. Should explosions of ethylene occur frequently throughout the country, or should one occur at the clinic, my associates and I probably would abandon its use and substitute nitrous oxide for it.

### ETHYLENE

The use of ethylene has decreased about 3 per cent each year for the last three years. This is without doubt due to the frequent reports of explosions. Thus far, no explosions have occurred at the clinic, although it has been administered more than 37,000 times. Satisfactory results are obtained with it in the majority of instances, although in many cases it has been reënforced with ether so that anoxemia might be avoided.

### ACETYLENE

The use of acetylene for thoracoplasty and less extensive operations on the thorax was begun in 1928. As I have stated before, it has been possible, with acetylene, to produce anesthesia and relaxation, with quiet breathing, without anoxemia and without the addition of ether. Acetylene was used more than three times as often in 1929 as in 1928; it was the anesthetic used as a routine for thoracoplasty and similar operations on the thorax. The results I have obtained in its use have been entirely satisfactory, except that the blood pressure is markedly elevated during the first twenty minutes of anesthesia. This elevation of blood pressure is almost a constant factor.[1] In anesthesia by acetylene I find it advantageous to give morphine shulphate and atropine sulphate subcutaneously prior to the administration of acetylene. There is said to be a greater possibility of explosion in the use of acet-

ylene than in the use of ethylene and I feel that if possible its use should be curtailed, if equally favorable results can be obtained in any other manner. At present, my associates and I plan to use it for thoracoplasty and other operations on the thorax in the presence of bronchiectasis. When bronchiectasis is absent, we may use morphine sulphate grain ¼ (0.016 gm.) subcutaneously, sodium *iso*-amylethyl barbituric acid 6 to 9 grains (0.40 to 0.60 gm.) by mouth, with ethylene or nitrous oxide and with mixtures of carbon dioxide and oxygen. We are still confronted with the difficulty of obtaining pure acetylene.

### BARBITURIC ACIDS

The use of barbituric acids as hypnotics, antispasmodics, and anesthetics, has been rather extensive since April 1, 1929. Statistical data and reports of individual cases concerning our experience with these agents appear elsewhere.[5, 7]

Personally, I feel that barbituric acids serve us best when used to reënforce preliminary medication, with the idea of reducing the amount of inhalation anesthetic which will then be required in order to produce anesthesia, relaxation, and quiet respiration without anoxemia. We have used chloretone by mouth, morphine sulphate subcutaneously, and sodium *iso*-amylethyl barbituric acid intravenously and by mouth in preparing patients for operation. This combination has been very satisfactory from more than one point of view. Fear, excitement and the amount of anesthetic necessary are reduced. Frequently the nervous patient is quieted sufficiently so that a local anesthetic alone is all that is necessary. Because of the antispasmodic properties of *iso*-amylethyl barbituric acid, it protects the patient against the most toxic effects of a local anesthetic; namely, convulsions of the respiratory musculature and the resulting anoxemia. In 1929, it was used by mouth in more than 500 cases with satisfactory results. I have given it by rectum in capsules of 3 grains (0.20 gm.) to children and adults when oral and intravenous methods were contraindicated or exceedingly difficult to follow. Capsules given by rectum have been very satisfactory, especially in children. Unless the dose of the barbituric acid is 9 grains (0.60 gm.) or less, I prefer to give the drug intravenously.

In 1929, sodium *iso*-amylethyl barbituric acid was administered more than 600 times and almost standard technic has been adopted in its intravenous administration which is as follows:

A dose of sodium salt of *iso*-amylethyl barbituric acid is dissolved in sterile distilled water to make a 10 or 20 per cent solution and is aspirated into a 10 c.c. syringe. A very sharp needle is attached, and intravenous puncture is made. The drug is then injected, in the average case, at the rate of about 2 c.c. for each minute for the first 4 c.c. It is always injected much more slowly in old and debilitated patients, especially in the presence of hypotension. Readings of blood pressure are taken each minute during the administration of the drug. If the blood pressure is normal at the beginning, and then falls to a level of 85 or 90 mm., systolic, and remains low, the injection is discontinued and the needle is withdrawn.

As the anesthetic solution is being injected, the patient is asked questions. When he can no longer respond it is considered that the full hypnotic dose has been given, but even then little, if any, anesthesia has been produced. If, for any reason, it is desirable that anesthesia be produced with the barbituric acid alone, the injection is continued, and the degree of anesthesia is ascertained by grasping the skin with a skin forcep; if there is no response to this stimulus, traction on the skin with the forceps is added. If there is still no response to the stimulus, anesthesia is considered to be established. Then it remains only to decide how long it is desired that the anesthesia should last. If the operation is to be long, and it is desirable that the patient have prolonged sleep after the operation, the injection is continued until 4 to 6 grains (0.24 to 0.40 gm.) more of the drug have been given. Throughout the injection the depth of respiration must be constantly observed. If it becomes shallow, or stops at any time, the injection must also be stopped immediately and no further injection made until the respiration becomes reëtablished. An early untoward effect on respiration is almost always directly due to administration of the drug at an unduly rapid rate. In estimating the amount of the drug to be used in controlling nonsurgical patients who are excited or have some spasmodic disorder I expect to see some effect of the barbituric acid over as many hours as there were grains used. As the effect of the drug is wearing off, some patients will sleep, whereas others have simply a feeling of weariness.

In the average patient it can be expected that anesthesia will be maintained for twenty to forty minutes when a dose of 15 to 23 grains (1 to 1.5 gm.) has been used, provided the patient has been given a preliminary dose of chloretone grains 10 (0.65 gm.), by mouth, and morphine sulphate, grain 1/4 (0.016 gm.) with atropine sulphate grain 1/150 (0.0004 gm.) subcutaneously. In the majority of instances I have used sodium *iso*-amylethyl barbituric acid but I also have used sodium ethyl*iso*butyl barbituric acid in a few cases.

In reviewing the literature on the barbituric acids I find their outstanding disadvantages to be as follows: (1) postoperative pulmonary edema, and (2) excitement, which appears frequently and is very annoying unless some method of restraint is applied. On the other hand, patients to whom the drug has been given are so enthusiastic concerning it that a genuine effort should be made to use it in preparing patients for operation.

### TRIBROMETHYL ALCOHOL

The new general anesthetic, tribromethyl alcohol (avertin or E-107) administered usually by rectum has been recommended very highly. Therefore I used it in a few cases in 1929. I was careful to give no more than 100 mg. for each kilogram of body weight and have prepared patients preoperatively with chloretone grains 10 (0.65 gm.) by mouth, morphine sulphate grains 1/4 (0.016 gm.), with atropine sulphate grain 1/150 (0.0004 gm.) subcutaneously. It was my intention to produce only basic anesthesia and to combine it with anesthesia by inhalation. Occasionally no other anesthetic was necessary and results were satisfactory. There have been reports of intestinal irritation resulting from the rectal use of tribromethyl alcohol and I was particularly concerned about a few cases in which patients complained of tender anus and rectum for a few days after operation. Proctoscopic examination, however, revealed no pathologic condition and each patient made an uneventful recovery. However, I believe my associates and I are not likely to use this drug in aqueous solution. If we use it at all, it will probably be in a solution of gum acacia and then only as a basic anesthetic.

### BIBLIOGRAPHY

1. Franken, H. and Schürymeyer, A.: Kollaps und Narkose. Narkose u. Anaesth. 1:437-438 (Sept.), 1928.
2. Lundy, J. S.: Experiences with anesthesia in 1925. Current Res. Anesth. and Anal. 6:38-42 (Feb.) 1927.
3. Lundy, J. S.: Anesthetics used in The Mayo Clinic in 1926, especially oil-ether anesthesia. Surg. Clin. N. Amer. 7:1617-1625 (Dec.) 1927.
4. Lundy, J. S.: A brief review of the use of anesthetics in The Mayo Clinic in 1927. Surg. Clin. N. Amer. 9:113-121 (Feb.), 1929.
5. Lundy, J. S.: The barbiturates as anesthetics, hypnotics, and antispasmodics: their use in 1000 surgical and nonsurgical cases in man and in operations on animals. Proc. Staff Meetings of Mayo Clinic, 4:225-230 (July 24), 1929.
6. Lundy, J. S.: Data concerning the use of various anesthetics in The Mayo Clinic in 1928, with special reference to spinal anesthesia, acetylene, and carbon dioxide. Surg. Clin. N. Amer. 9:940-950 (Aug.) 1929.
7. Lundy, J. S.: The barbiturates as anesthetics, hypnotics, and antispasmodics: their use in more than 1,000 surgical and nonsurgical clinical cases and in operations on animals. Current Res. Anesth. and Anal. 8:360-365 (Nov.-Dec.), 1929.
8. Lundy, J. S.: The general anesthetic tribromethyl alcohol (avertin; E-107): review of the literature on its rectal and intravenous use. Proc. Staff Meetings Mayo Clinic., 4:370-380 (Dec. 18), 1929.
9. McCuskey, C. F., and Hunt, V. C.: Spinal anethesia: its use in prostatectomy. Tr. South. Assn. Anesth. (In press.)
10. Rankin, F. W., and McCuskey, C. F.: Spinal anesthesia in surgical procedures in the colon. Current Res. Anesth. and Anal. (In press.)

# ADENOMATOUS POLYPS OF THE COLON AND RECTUM*

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THE term adult, acquired polyp was first applied in 1925 to a certain class of pedunculated neoplasms found in the large bowel. Erdmann and Morris used this term as a clinical differentiation from the so-called multiple polyposis which is now accepted as a definite entity. The word polyp has a purely morphological application with no relation to histological characteristics. A polyp is merely any new-growth with a pedicle, and may be an adenoma, fibroma, lipoma, myoma, or angioma, and may be benign or malignant. There have been various attempts at clinical or pathological classifications of polyps, but they have been rather unsatisfactory. Lockhart-Mummery classifies the adenomata of the bowel as: (1) True multiple adenomata; (2) multiple polyps associated with old strictures of the colon; (3) polyps associated with hyperplastic tuberculosis; (4) polypoid condition resulting from ulcerative colitis.

The relation of polyps to mucous membrane irritation in the colon has long been well known. Single or scattered polyps, sometimes quite obviously the result of irritation, at other times with no discoverable etiological lesion, sometimes quiescent and discovered accidentally, at other times producing violent symptoms necessitating immediate attention, constitute the group called by Erdmann and Morris the adult, acquired type. It was suggested in a former paper that the term "adult" be discarded, using only the word "acquired," since the former carries the implication that this type of tumor is confined to adults and is not found in children. Adenomatous polyps make up by far the largest group of intestinal growths and are frequently seen in children.

In the second type of polyposis we find the mucosa of the bowel the seat of hundreds or thousands of small polypi (Fig. 1). Luschka estimated the number in his patient at 10,000. This form usually makes itself evident in childhood or early youth, rarely has a discoverable associated etiologic lesion, has a distinct familial tendency, and a milgnancy incidence of from 40 to 50 per cent. This form is the true multiple, adolescent, congenital polyposis, and is the only type to which the term multiple polyposis should be applied. A bowel may contain scattered and even fairly numerous polypi, and they may still

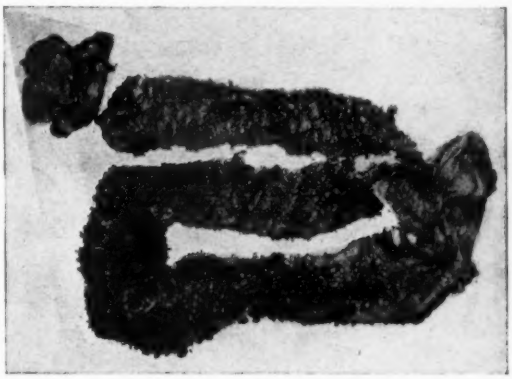

Fig. 1. Resected colon showing multiple polyposis.

be merely multiple polyps, and not a true multiple polyposis.

In a collection of 46,879 cases of rectal diseases of all types there were 554 instances of benign tumors. Dewis in 1904 collected from the literature 219 cases of benign tumors of the intestinal tract, all of which were submitted to careful microscopic examination. Leichenstern listed 128 intestinal polypi. Of the total 347 cases in the two series 243 were in the rectum and colon, and 202 were adenomata. The various histological types were distributed as follows:

TABLE 1

| | Angio. | Fibro. | Myo. | Adeno. | Lipo. | Total |
|---|---|---|---|---|---|---|
| Colon | 0 | 1 | 8 | 46 | 12 | 67 |
| Rectum | 2 | 2 | 10 | 156 | 6 | 176 |
| | 2 | 3 | 18 | 202 | 18 | 243 |

The following table from Erdmann and Morris illustrates the predilection of adenomatous tumors for the rectum and colon.

TABLE 2

| | Small gut | Large gut | Rectum |
|---|---|---|---|
| Adenoma | 11% | 25.2% | 63.8% |
| All other forms | 48% | 27.1% | 24.8% |

*From the Department of Proctology, Miller Clinic, Saint Paul. Thesis presented before the Minnesota Academy of Medicine, Dec. 11, 1929.

In a study of Yeomans complete table of the 347 cases of Dewis and Leichenstern we find 75 per cent of all benign tumors of the intestinal tract were adenomata. Of all the benign growths in the intestinal tract 45.9 per cent, and of the adenomata 63 per cent are found in the rectum, hence well within reach of the examining finger. The moral is obvious.

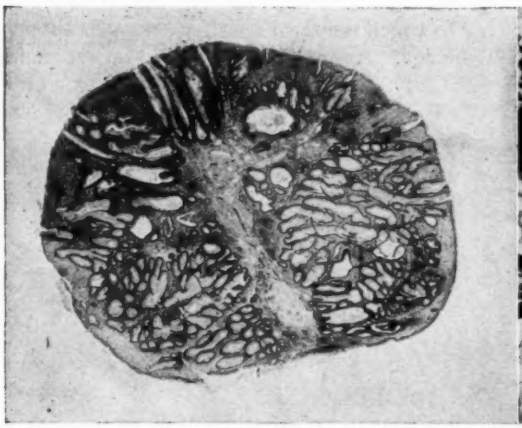

Fig. 2. Benign adenomatous polyp. Low magnification. Columnar epithelium and large clear glands which are normal in appearance.

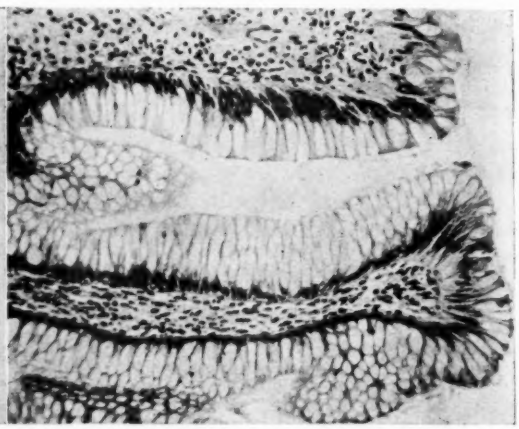

Fig. 3. High magnification of specimen shown in Fig. 2.

*Age.*—As has been said, true multiple polyposis is a disease of childhood and early youth; the acquired polyp one of any age. In 127 cases of multiple polyposis collected in a former paper, the ages were as follows:

TABLE 3

| | |
|---|---|
| Under 10 years | 5 |
| 10 to 20 years | 23 |
| 20 to 30 years | 21 |
| 30 to 40 years | 23 |
| 40 to 50 years | 11 |
| 50 to 60 years | 4 |
| 60 to 70 years | 5 |
| 70 to 80 years | 1 |

Of the cases in the above series 65.6 per cent were between the ages of 15 and 35 years. It is of additional significance that of the cases in the series in which the ages were given, over one half had had symptoms for over ten years, so that the age in the series is actually lower than is shown.

Of acquired polyps one writer says "Clinically adenomata occur most frequently in children from 3 to 10 years of age, though they are not unusual in adults." David, writing in Lewis' Surgery states that adenoma of the rectum is frequently found in children from two to five years of age, but is also often observed in adults. In our own series of 25 single polyps the ages ran from three to seventy-one years, distributed as shown in the following table.

TABLE 4

| | |
|---|---|
| Under 10 years | 4 |
| 10 to 20 years | 0 |
| 20 to 30 years | 1 |
| 30 to 40 years | 2 |
| 40 to 50 years | 3 |
| 50 to 60 years | 10 |
| 60 to 70 years | 4 |
| 70 to 80 years | 1 |

Our oldest patient was seventy-one years of age, and in the literature are case reports of single adenomas in children of only a few months.

*Site.*—As has been said 63 per cent of adenomata of the intestinal tract are located in the rectum. These single polypoid tumors may be situated just inside the anal canal, in the ampulla of the rectum, at the recto-sigmoid angle, or in the sigmoid itself. Palpable pedunculated tumors immediately inside the anal orifice are more likely to prove to be hypertrophied anal papillæ or hemorrhoids which have been the seat of inflammatory change. When adenomata develop in this area they sooner or later develop a pedicle of such length that they may protrude from the anus during defecation. A favorite location for

the development of adenomata is the anterior wall of the rectum, proximal to a sharp fold marking the junction of the rectum and sigmoid. In this region a small tumor may escape notice unless the fold is depressed to allow one to see behind it. Carcinoma of the rectum also is often seen in this site, and may quite probably be the result of earlier polyp formation.

*Characteristics.*—The adenomatous polyp is not in a true sense an adenoma, but merely a polyp covered with more or less normal mucosa. Macroscopically it is bright red, glistening, fairly smooth, but sometimes lobulated like a mulberry, and varies in size from 1 to 2 centimeters in diameter to that of a walnut. Goodsall reports one the size of an orange, and Esmarch one weighing four pounds. It bleeds very easily, and thus has as one of the earliest symptoms the passage of bright blood in the stool. The pedicle may be extremely short and thick, or it may be several inches long, and so slender as to tear off with the slightest traction, liberating the tumor and permitting it to be passed with the stool. Prideaux saw a tumor with a pedicle six inches in length. Microscopically it is seen to spring from the mucosa of the intestine and have a connective tissue stalk covered with glandular epithelium showing a hyperplasia. The stalk usually shows a leukocytic infiltration with the formation of new stroma cells, blood, and lymph vessels. Ewing describes the formation of adenomatous polyps as "inflammatory adenoid hyperplasia."

*Malignancy.*—In considering the possibility of malignant change in adenomatous tumors of the bowel it is perhaps advisable to regard them as two separate groups, the single or scattered polyps, and the congenital, multiple polyposis. In 36.4 per cent of the collected 127 cases of multiple polyposis there was a known and proven malignancy. Since it was known that an additional thirty-one patients died rather early of cachexia, inanition, or bleeding, it is reasonable to assume that the malignancy index was somewhat higher than the 36.4 per cent that the statistics showed. In Doering's and Soper's series the percentage of malignancy was 43 per cent. Mummery states that almost all recorded cases of multiple polyposis of the colon eventually become malignant.

In the case of the single polyp the question of malignancy is not so easily disposed of owing to the fact that these tumors are usually promptly removed as soon as diagnosed, thus ending once and for all the chance of becoming malignant. In the true multiple type there is ample opportunity to study the changes that take place, and often to observe and study microscopically the transi-

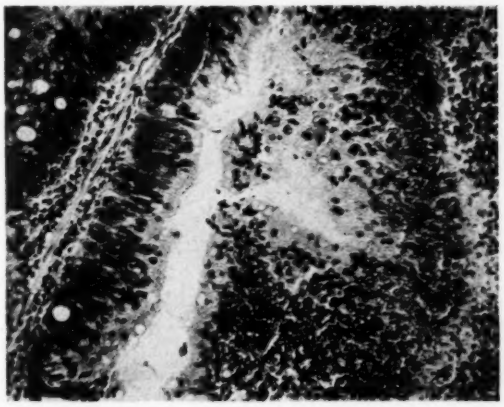

Fig. 4. Adenomatous polyp showing early adeno-carcinoma.

tion. In our own case of multiple polyposis, the rectum and sigmoid were observed frequently through the proctoscope, and from time to time numbers of the larger polyps were removed with the snare, until at the end of two years, cancerous change occurred more or less suddenly at the rectosigmoid junction where the tumors had previously been benign (Figs. 5, 6, 7, 8). From the fact that single benign tumors are frequently seen in young children, one infers that many children have them and go untreated. If these tumors all ultimately become malignant, cancer of the rectum should be more common in early life than is the case, although we have no evidence to prove that these polyps do not remain benign until advanced age and then, only, become cancers. Single polyps are frequently found incidentally during autopsies on persons of advanced age, and have apparently produced no symptoms. Ewing believes that the polyp, which he calls "inflammatory adenoid hyperplasia" demonstrates more clearly than any other process the logical transition from simple inflammatory hyperplasia to carcinoma. Verse thinks that most gastro-intestinal cancers have their origin in adenomata which have arisen from simple inflammatory hyperplasia. In our own series of twenty-five cases, six of the single polyps showed carcinomatous change. It is entirely possible that if every carcinoma of the rectum might be seen

early enough it would prove to be morphologically similar to the six in our series, that is, with a base narrower than the body of the tumor.

*Diagnosis.*—First, a routine rectal examination should be made of every patient coming for a complete examination, with a thorough investigation of the symptoms of rectal bleeding, instead of a dismissal of it as having its origin in hemorrhoids. In the Massachusetts General Hospital in two years 85 per cent of cases of carcinoma of the rectum coming to operation had been treated for the relief of hemorrhoids within the previous two years. Secondly, rectal examination should be made of all patients with rectal symptoms. By the above should be meant patients with pain about the anus, rectum, sacrum, back of thighs, or left lower abdomen, alterations in the size, shape, consistency, constituents, or color of the stool, deviations from the normal in the sensations accompanying the bowel movements, blood or discharge, constipation coming on suddenly, or diarrhea. Any of these symptoms should certainly be the indication for digital examination, many of them for a proctoscopic examination. As was said earlier, 45 per cent of all benign tumors of the intestinal tract are within reach of the examining finger. On digital examination these tumors are smooth, fairly hard and firm, but not with the firmness of a carcinoma, and usually they may be identified as being definitely pedunculated. Seen through the sigmoidoscope with the patient either on the Haines table or in the knee chest position they present themselves as bright red, glistening round masses, sometimes lobulated like a mulberry, which ooze blood freely when rubbed with an applicator or agitated with the end of the instrument. There is a definite difference in the appearance of a benign polyp from that one which has undergone malignant change which is hard to describe, but which often gives a strong suspicion before a biopsy is made.

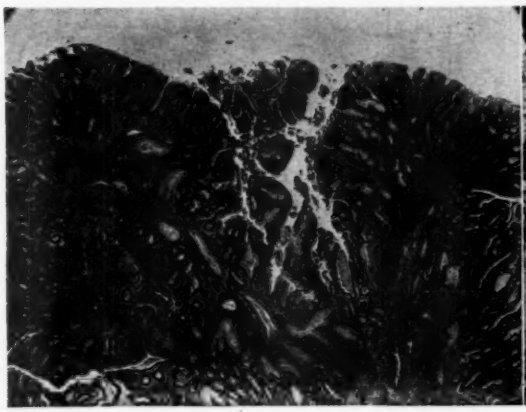

Fig. 5. Benign adenomatous polyp removed from patient having multiple polyposis.

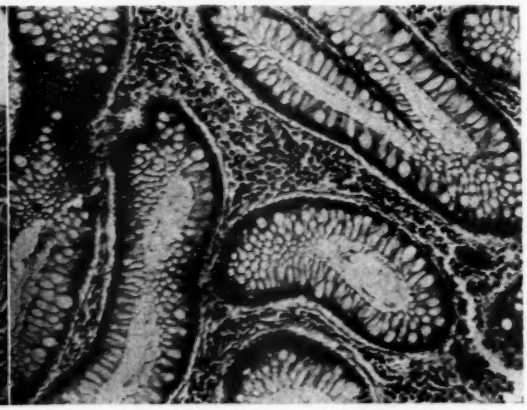

Fig. 6. High magnification of specimen shown in Fig. 5. Glands lined with normal epithelium of the columnar type. Cells filled with mucus.

*Symptoms.*—The symptoms vary from none at all in the case of early or very small tumors to occasional bleeding, and, depending on the size and location, tenesmus and a sense of incomplete evacuation, to a complete obstruction or intussusception. The symptoms in my twenty-five cases were as follows:

TABLE 5

| | |
|---|---|
| No symptoms | 5 |
| Bleeding only | 7 |
| Bleeding and irritation | 1 |
| Bleeding and discharge | 2 |
| Bleeding and prolapse | 4 |
| Prolapse only | 1 |
| Bloody diarrhea | 2 |
| Sense of incomplete evacuation | 1 |
| Pain referred to bladder | 1 |
| Obstruction | 1 |

It will be seen that of the twenty-five patients, sixteen had bleeding as one of their symptoms. Regarding blood in the stool as a symptom of carcinoma, Jones has the following to say: "Blood is also present with polyps of the colon or rectum, a condition we have become more and more to believe to be of great importance, of even greater importance than carcinoma itself, for

polyps frequently become carcinoma, and proper treatment before they become malignant means permanent cure." One of our cases had been diagnosed as ulcerative colitis and treated as such for several weeks, while another patient was told she had "intestinal flu." Each had a palpable tumor in reach of the examining finger.

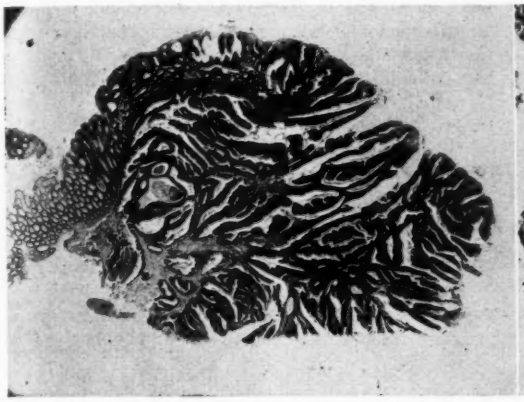

Fig. 7. Section of malignant polyp removed from patient having multiple polyposis. Glands large and irregular.

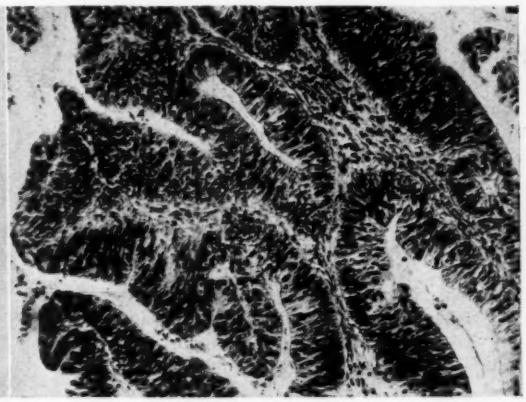

Fig. 8. High magnification of specimen shown in Fig. 7. Giant glands lined with atypical columnar epithelium.

*Treatment.*—Adenomatous polyps should be considered as distinctly premalignant growths and as such should be eradicated when seen. The low-lying tumors may be prolapsed after the sphincter has been relaxed with novocaine, and, after the pedicle has been ligated, the tumor may be removed. Those which are too high to draw through the anal orifice may be removed with the snare through the proctoscope. There are one or two precautions to be observed in this procedure. In the case of a tumor situated above the peritoneal reflection, it is readily seen that too much tissue may be included in the snare so that when it is drawn taut, an opening into the peritoneal cavity may result. Care should be taken to grasp only the pedicle. Secondly, there may be rather troublesome bleeding if a cold snare is used, and the growth removed too quickly. If one uses such a snare the wire should be drawn up very slowly, allowing three or four minutes for the pedicle to be pinched off, in order that the vessels may become closed. The base may be touched with an applicator dipped in some cauterant to insure its remaining dry. In one of our cases a polyp 2 centimeters in diameter was snared from the posterior wall at the rectosigmoid junction. The stump was observed for a time until it was felt that all bleeding had stopped, when the patient was allowed to go home. During the following eight hours he was compelled to empty his rectum four times, each movement consisting of large clots. After the fourth movement he reported his condition and an investigation was made. On cleaning the clots from the rectum a steady drip of blood was seen coming from the stump of the pedicle, and it was only after fulguration that the bleeding ceased. Since that occurrence I have used a high frequency snare and have had no repetition of that embarrassing complication. In my cases the malignant polyps were snared and the bases thoroughly cauterized or fulgurated. In one case radium was used after fulguration. One case went elsewhere for treatment and had a radical excision of the rectum with a permanent colostomy.

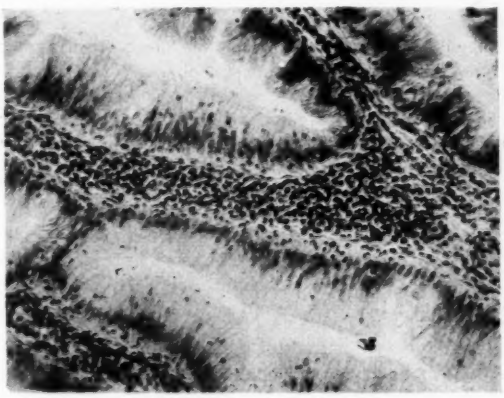

Fig. 9. Adenomatous polyp. Inflammatory type.

Of the six cases with carcinomatous change,

one patient died five days after a colostomy for obstruction due to a large carcinoma above his smaller polyp, the other five are alive, at various periods of from three years to four months after removal of the polyps. One of the cases of benign adenoma died later of carcinoma of the bladder, and another of an obstructing carcinoma above his benign polyp. The remainder are alive and well.

BIBLIOGRAPHY

Coffey, R. C.: Colonic polyposis with engrafted malignancy. Ann. Surg., March, 1926, p. 364.

Dewis, J.: Two hundred nineteen benign intestinal tumors. Boston Med. and Surg. Jour., April, 1906, 155:427.

Douglas: Lipoma of the large intestine. Ann. Surg., 1926, Vol. 84, No. 1.

Doering, Hans: Die Polyposis Intestini und Ihre Beziehung zur Carcinomatosendegeneration. Arch. f. Klin. Chir., 1907, 83.

David, V.: Lewis' Practice of Surgery, 7:78.

Drueck, C. J.: Benign tumors of the lower bowel. Am. Med., April, 1920, 204.

Erdmann, J. F., and Morris, J. H.: Polyposis of the colon. Surg., Gyn. and Obst., April, 1925, 40:460.

Ewing: Saunders and Co. Neoplastic Diseases.

Hullsiek, Harold E.: Multiple polyposis of the colon. Surg., Gyn. and Obst., Sept., 1928, 346.

Judd, E. S., and Foulds, G. S.: Adenomata involving the sigmoid. Surg., Gyn. and Obst., Nov., 1923, 37:648.

Jones, Daniel: Carcinoma of the rectum. Jour. Missouri State Med. Assn., May, 1927, 179.

Jessup: Adenomyoma of recto-vaginal septum. Am. Med. Assn., August 1, 1914.

Pennington: Rectum anus and pelvic colon. Blakiston and Sons.

Primrose, A.: Tumors of the large bowel. Can. Med. Assn. Jour., Sept., 1925, 897.

Warwick, Margaret: Intestinal polyposis in its relation to malignancy. Minn. Med., February, 1922.

Yeoman, Frank: The carcinomatous degeneration of rectal adenomas. Jour. Am. Med. Assn., 1927, 89:852.

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## THE FEMALE SEX HORMONE

At the thirteenth International Congress of Physiology in Boston, held in August, 1929, E. A. Doisy announced for the first time the isolation of the female sex hormone in crystalline form. Subsequently, A. Butenandt announced that he, too, had isolated the hormone of the female sex glands in chemically pure crystallized form. In an article describing the product, Butenandt completely ignores the Doisy announcement. Butenandt points out that the substance is free from nitrogen and sulphur, and that it has no connection with protein substances and carbohydrates. In his opinion, a chemical analysis may make it possible to produce the hormone synthetically. As might have been anticipated, the German investigator promptly conferred on his product a trade name controlled through a German manufacturer. Doisy, aided by the Council on Pharmacy and Chemistry, will no doubt choose a scientific name suitable to the nature of the product and to American conditions. (Jour. A. M. A., February 1, 1930, p. 341.)

## THE COMMITTEE ON FOODS

More than a hundred products, representing the products of numerous manufacturers, have been submitted to the committee, in addition to several national advertising campaigns by coöperative marketing organizations. This coöperation is welcomed by the committee but obviously has thrown a great burden of work on the committee at the start. Manufacturers have greeted with acclaim the permission to use on packages and in advertising the seal of the committee. Whereas less food is eaten, so far as concerns caloric or energy value, foods have been greatly modified to improve palatability and to provide what are recognized as necessary ingredients in the form of vitamins and mineral salts. It is the hope of the committee that its efforts will give stability to a rapidly growing industry and prevent the sinking of the modern food market in a morass of hokum such as engulfed the drug industry in its developing stages. (Jour. A. M. A., February 8, 1930, p. 415.)

# POSTOPERATIVE HYPOTHYROIDISM*

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THE condition of lowered metabolism, or myxedema, following surgical treatment of goiter, although long recognized, has received comparatively less attention than its adverse condition, hyperthyroidism. This is rather surprising when one considers how partial thyroidectomy for goiter has been popularized, especially during the last quarter of a century.

This negligence in the study of hypothyroidism can probably be best explained by the fact that immediate operative results in goiter as a rule are so startling that they are deceiving. A patient suffering from hyperthyroidism will present following operation such an immediate and striking improvement that the surgeon is thrown off guard, and the patient is dismissed as recovered, when weeks or months later a condition of hypothyroidism will supervene which is so insidious in its onset that even the patient does not recognize its beginning, but considers his or her condition as a matter of course, and, with few exceptions, will not seek further attention.

It was the recognition of an occasional case of an immediate temporary hypothyroidism and an occasional case of myxedema, discovered in a partially thyroidectomized individual weeks or months later, that led us to institute a follow-up study of metabolism in all cases of partial thyroidectomy.

The material for this paper consists of metabolism studies in a group of 209 patients who had been operated on for goiter from one to seven years previously. In this group of 209 cases there were fourteen patients with a definite hypothyroidism, in whom the diagnosis had been either suspected or definitely proven and had been under treatment, some haphazardly, others rigorously, with thyroid preparations over a period of months or years.

These patients came in for metabolism study in response to a questionnaire. Recognizing the fallacies that a stereotyped questionnaire may lead to, it was considered wise not to adduce too many conclusions, and therefore the greater part of this paper will be confined to an analysis of the metabolic study.

Since the middle of the Nineteenth Century, when Reverdin,[1] and at about the same time Kocher, first recognized postoperative myxedema, there had been no extensive attempts to follow up goiter cases until the introduction of basal metabolism. Among the earlier contributors of case reports on the continent were von Eiselsberg, Möbus,[2] Munk,[3] and Roux.[4] Bonilla and Blanco Soler[5] state that postoperative myxedema is rare, and that the low percentage of postoperative myxedema is due to the existence of accessory thyroid glands. Seulberger[6] reported a case of postoperative myxedema and tetany in a patient who had a typical Graves' disease with operative removal. Nobel[7] reported a case of postoperative myxedema in a child thirteen years of age.

Since the introduction of basal metabolism, systematic study and follow-up systems have been attempted, not only in goiter series but also in so-called medical hypothyroidism. King[8] has reported thirty-six cases of hypothyroidism occurring in hospital patients, from a group of 200 cases, only three of which followed thyroidectomy. Jordan[9] has reported eighteen cases in which the basal metabolic rate ranged from minus 16 to minus 27; five only (.9 per cent) had clinical myxedema necessitating treatment. Smith, Clute and Strieder[10] reported an incidence of postoperative myxedema of 15 per cent in 100 patients who had been followed for one year after operation. Thompson and Thompson[11] have made an exhaustive study of metabolism, and report in a group of permanent low metabolism, with permanent myxedema, an occurrence of 2 per cent in 465 cases, 130 of which had been treated by *x*-ray alone, and in this group the incidence of myxedema was 4 per cent.

For the diagnosis of postoperative myxedema, I consider essential a low metabolic rate following an operative attack upon the thyroid, edema and a definite improvement in general and an increase of the basal metabolic rate to normal, under thyroid medication.

*From the Duluth Clinic, Duluth, Minnesota. Presented at the annual meeting of the Northern Minnesota Medical Association, Bemidji, Minnesota, September 3, 1929.

In this group of 209 cases, there were forty-five with basal metabolic rates of minus 10 and lower. I have selected those with rates of minus 10 and lower because I soon learned that there were no cases of definite hypothyroidism with basal metabolic rates above minus 10—in fact, as a general rule, the lower the metabolism, the more definite and striking the hypothyroidism. There were some cases where the rates fell between 0 and minus 10, and because of rather indefinite complaints they were put on desiccated thyroid, and were kept under observation and their rates rechecked; but none of them experienced any improvement when their metabolism was elevated.

In this large group of forty-five cases with metabolic rates less than minus 10, there were two natural divisions: the first, those with a definite hypothyroidism, of which there were twenty-five, with basal metabolic rates ranging from minus 14 to minus 44, and a second group, which I wish to term low metabolism without myxedema, with rates from minus 10 to minus 15, of which there were twenty. In this second group there were fourteen females and six males; the ages ranged from 25 to 62 years. Eleven, or approximately one-half, followed subtotal thyroidectomy for exophthalmic goiter; six followed resection for non-toxic adenomata; and three followed subtotal thyroidectomy for what we wish to term "borderline" cases. In seven cases, or approximately one-third of the group, there were no complaints whatsoever. Seven, or another third, had a definite neurosis, and this group included all the borderline cases. In four of the last group there was some suggestive improvement, although there was still a persistence of neurotic complaints.

Of the twenty-five cases which fell into the definite group of hypothyroidism, the basal metabolism, as mentioned before, ranged from minus 14 to minus 44. In this group there were twenty-four females and one male; the ages ranged from 20 to 63 years. Nineteen, or approximately four-fifths of the cases, followed subtotal thyroidectomy for exophthalmic goiter. There were three each following operation for non-toxic adenoma and toxic adenoma. Five cases of this group had had multiple operations upon the thyroid.

The diagnosis of many of these cases was obvious on inspection. It will be remembered that in fourteen of the group of twenty-five cases the diagnosis had either been suspected or definitely proven months or years before, and have been under observation innumerable times since operation.

Weakness and fatigue were the outstanding subjective complaints. The others, in the order of their importance, were dyspnea, palpitation, a feeling of being too cold, and a dry skin.

Objectively, the findings varied somewhat. It will be remembered that several of the patients, when they came in for this metabolic study, were already taking their daily dose of thyroid, and in these, at that time, there was not much deviation from the normal, although I recall vividly that in some of these cases, following thyroidectomy, there was the classical picture of myxedema, with edema, loss of hair, dry coarse skin, and mental and physical sluggishness.

In one-half the cases, and this is true also of the group of low metabolism without myxedema, there was no gain in weight. The remaining half showed an average gain of approximately twenty pounds.

The outstanding objective finding was edema of the face and extremities. This varied a good deal with the degree of myxedema, but in a few of the cases it was very marked. Other outstanding objective findings included a dry scaling skin. In some of the more marked cases the skin had the appearance of being tough and inelastic. Another striking change was the loss of hair, especially from the eyebrows, and a change in the texture of the hair from a fine to a coarse type. Another change was a characteristic physical and mental sluggishness. Many of these people found great difficulty in arousing themselves in the morning and many of them again complained bitterly of mental apparitions.

In only four cases of this group was the blood pressure elevated, and this was explained on the basis of a concomitant essential hypertension as these patients were all over fifty years of age.

In only six cases was there a definite anemia.

In the treatment of these cases an attempt was made to bring the metabolism up to a normal level and to maintain it at that level by frequent repetition of the basal rate reading. It will be remembered again that fourteen patients had been taking thyroid gland, either as the desiccated whole gland or the extract or as thyroxin, intermittently for months or years. Most of

them had learned to regulate their dosage by experience. It was found that there was a definite improvement both subjectively and objectively in every case.

*Summary.*—A group of 209 cases in which subtotal thyroidectomy for goiter had been performed from one to seven years previously is reported. Of this number, twenty-five, or approximately 8 per cent, had a definite hypothyroidism or myxedema. In this group the basal metabolism ranged from minus 15 to minus 44.

Another group of twenty cases, with basal metabolic rates ranging from minus 10 to minus 15, was not materially benefited by thyroid medication.

The outstanding subjective complaints were weakness and fatigue.

Objectively, edema and a metabolic rate of minus 15 or more were the significant findings.

*Conclusions.*—1. Postoperative goiter cases merit more careful study and more rigorous follow-up, especially in regard to their metabolism.

2. A certain percentage, in this series approximately 8 per cent, show a definite hypothyroidism after subtotal thyroidectomy.

3. Proper thyroid medication will improve every case of definite hypothyroidism.

BIBLIOGRAPHY

1. Reverdin, J. L.: Quelques mots sur le myxoedeme operatoire. Schweiz. med. Wchnschr., Basel, 57:841, 1927.
2. Möbus: Fall von Cachexia strumipriva. Berl. Klin. Wchnschr., 58:1017, 1921.
3. Munk: Ein Fall von Myxodem nach operiertem Morbus Basedow. Deutsche med. Wchnschr., Leipz., and Berl., 46:1154, 1920.
4. Roux: Myxoedeme postoperative. Schwarz. med. Wchnschr., Basel, 50:678, 1920.
5. Bonilla, E. and Blanco Soler, C.: Case of postoperative myxedema. Siglo med., Madrid, 72:669, 1923.
6. Suelberger, P.: Postoperatives myxodem nach Basedow. Beitt. z. klin. Chir., Berl. u. Wien., 135:624, 1925-26.
7. Nobel, E.: Ein 13 Jahre altes Kind mit postoperativem Myxodem. Wien klin. Wchnschr., 38:340, 1925.
8. King, J. T., Jr.: Hypothyroidism. South. Med. Jour., 17:662, 1924.
9. Jordon, S. M.: Arch. Surg., 7:1, 1925.
10. Smith, L. W., Clute, H. M., and Streider, J. W.: The results in one hundred consecutive cases of hyperthyroidism operated upon. Surg. Gyn. and Obst., 46:325, 1928.
11. Thompson, W. O., and Thompson, P. K.: Temporary and permanent myxedema following treated and untreated thyrotoxicosis. Jour. Clin. Investigation, Vol. VI, No. 3 (December), 1928.
12. Wegelin, C.: Zur Kenntnis der Kachexia thyreopriva. Virchow's Arch. f. path. Anat., Berl., 254:689, 1925.
13. Clute, H. M.: Treatment of complications arising after operations on thyroid gland. Boston M. & S. J. 91: 1147-1151, Dec. 18, 1924.
14. Grigsby, C. M.: Hypothyroidism. South. Med. Jour., 45:4 (Jan.), 1926.
15. McCaskey, G. W.: Clinical importance of hypothyroidism. Jour. Indiana Med. Assn., 18:129, 1925.
16. Snell, A. M.: Hypothyroidism. Minn. Med., 6:503, 1923.
17. Taylor, W. A.: Hypothyroidism. Northwest Med., 24:422, 1925.
18. Thompson, W. O., and Thompson, P. K.: Low basal metabolism following thyrotoxicosis. Jour. Clin. Inv., Vol. V, No. 3 (April), 1928.
19. Thompson, W. O., and Thompson, P. K.: Low basal metabolism following thyrotoxicosis. 1. Temporary type without myxedema, with special reference to the role of iodine therapy. Jour. Clin. Inv. Vol. V, No. 3 (April), 1928.
20. Thompson, W. O., and Thompson, P. K.: Significance of low basal metabolism following thyrotoxicosis. Am. Jour. Surg., 7:48 (July), 1929.
21. Thompson, W. O. and Thompson, P. K.: Temporary edema of the face following treatment for exophthalmic goiter. Am. Jour. Med. Sci., 178:73 (July), 1929.

# EARLY OR LATE OPERATIVE TREATMENT IN COMPLICATIONS OF ACUTE OTITIS MEDIA*

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*Saint Paul*

BEFORE I go into the selected theme, I want to say a few words about the etiological, anatomical, and pathological processes, and the clinical symptoms in acute otitis media.

1. In regard to the etiology of acute otitis media: There are just as many causes for acute purulent otitis media as there are diseases in human beings. Each one of them can be the originating factor. To begin with, all infectious diseases like scarlet fever, la grippe, and many others, can cause otitis media. In these cases the otitis media is a part of the generalized morbidity, but in all cases of otitis media one is able to find a general or local disease as the etiological factor. But, whatever the original cause may have been, one thing is certain, that it is an infection of the tympanic cavity by certain organisms. From a scientific standpoint, it has not yet been proved that the tympanic cavity is free from organisms, but from a clinical point of view we can call the tympanic cavity sterile. In the diseased tympanic cavity we nearly always find bacteria. Its four main offenders are: *the streptococcus pyogeneous, streptococcus mucosus, diplobacillus lanceolatus,* and the *staphylococcus aureus.*

Naturally many other microörganisms are found in acute otitis media besides those just mentioned, especially those which cause the different infectious diseases, like diphtheria, typhoid fever, and so on.

2. The mode of infection: In 90 per cent of all cases the infection of the tympanic cavity is caused by the way of the Eustachian tube and usually along the surface of its epithelium. The hematogenous source of infection is much more rare.

3. Predisposing causes for infection: These for instance may be a lymphatic habitus of children, emaciation, local obstruction of the Eustachian tube from hypertrophic tonsils and adenoids, or congenital defects in the epipharyngeal area.

4. Pathologic anatomic changes of the mucous membrane of the tympanic cavity: At first the mucous membrane is infiltrated, then edema follows, later the stage of exudation, and if the process does not come to a standstill, at that stage, the bony structure will be also involved, and we have a regular local osteomyelitis.

5. The clinical symptoms: The first clinical subjective symptom of a beginning otitis media is earache, which is one of the most severe pains human beings are liable to suffer, as everybody who ever had earache can verify. Often with it comes tinnitus aurii of a pulsating character. A diminution of hearing accompanies these symptoms, but it is not very noticeable in the beginning. Some patients also complain of dizziness. The local retroauricular glands are swollen, and quite often one finds tenderness over the mastoid process, even in the beginning stage. General symptoms of otitis media are: chills, fever, and nausea.

6. Course and prognosis: Sequela: (a) a slow recession of all symptoms without perforation of the ear drum by the accumulated exudate. (b) Perforation of the ear drum by the purulent exudate. (c) The acute otitis media becomes chronic. (d) Manifestations of complications, the beginning of which is nearly always some bone involvement.

7. Treatment: (a) General therapeutic measures, like rest in bed, aspirin, and laxatives. (b) Local treatment: Phenol glycerin or cocain drops, hot applications and finally paracentesis. (c) After treatment: The ear canal is kept as clean as possible. Some use only dry cotton; some irrigate the canal with boric solution or hydrogen peroxide.

After this brief description of the usual course of acute otitis media we come to the question, what are the indications for operative procedure in acute otitis media? Unfortunately, medical science is not far enough advanced to prevent complications by conservative treatment in every case of otitis media. On the contrary, our remedies for the treatment of acute otitis media are

*Read before the Ramsey County Medical Society, Saint Paul, Minn., November, 1929 .

about the same as they have been for the past twenty-five years, and they are mostly symptomatic. A famous otologist once said, "Our medical remedies in otitis media are so few, that we can write them on one finger nail." But we can be of more help to those otitis media patients in whom complications have set in. Here, surgery has its place and cases which were hopeless before the surgical era, can be saved nowadays, thanks to the advancement of surgery in this special field. A paracentesis performed at the right time is just as much a life saving operation as an appendectomy in acute appendicitis. Therefore our ambition should be to increase our knowledge steadily regarding the indications for operative procedure in acute otitis media, which are not so well established, as for instance, the indications for surgery in acute appendicitis.

Especially in the last few years there has been a great deal of difference of opinion among otologists as to the right time for surgical procedure in complications of acute otitis media. Some prefer to operate as soon as the slightest symptom of a possible complication appears. Others wait and treat such cases conservatively and more observingly. The first group operates every otitis media, which has not stopped draining after two weeks of conservative treatment, the later postpones surgery as long as possible, until certain symptoms of complications have manifested themselves, asserting that such a conservative attitude does not endanger the life of the patient more than many unnecessary operations performed by those who follow the radical method.

The indications for mastoidectomy as generally established seem to be:

1. Objective symptoms of a destructive process of the bony structure, that is, infiltration or abscess formation in the mastoid process or its surroundings, sagging of the posterior wall of the ear canal, or symptoms of a fistula of the inner ear.

2. Where the discharge from the ear constantly is very profuse or even increases in spite of several weeks of conservative treatments.

3. When repeated paracentesis has been unsuccessful.

4. Persistent increased temperature. Besides these subjective and objective signs of bone destruction are others, more generalized symptoms, which indicate surgery in otitis media, for instance, loss of weight and poor appetite in the course of an otitis media, or meningeal irritation and a pathological spinal fluid indicating a threatening intra-cranial complication. The conservative group among the otologists followed the rule, never to operate before three weeks have elapsed since the onset of the otitis media. The rule may be right when the otitis media takes the usual course as described in text books. That is, during the first week is the stage of pain with a constant fever curve. The second stage is that of sero-purulent secretion, and decrease in the fever. The third stage is accompanied by purulent secretion, and an increase of temperature.

Quite often one notices even in the first stage a tenderness over the mastoid process upon pressure, known as matoidismus. This does not indicate that the bony structure must be effected; but a tenderness over the mastoid process at the end of the second or at the beginning of the third week means a complication in the course of otitis media.

But only a small percentage of otitis media cases take such a typical course. One often observes cases which do not fit in any of the previous mentioned stages. They are the ones which require painstaking examination and observation to enable us to decide whether surgical or conservative treatment should be adopted.

I shall mention here a few cases which show such an abnormal course, and so give quite a different indication for the operation. At the clinic of Professor Neumann[1] in Vienna, a series of cases were reported in which the otitis media, following a grippe epidemic, took a very foudroyant course. In these cases, two days after the beginning of earache, signs of meningeal irritation were manifest, like nausea, dizziness, pain in the occiput. In spite of immediate paracentesis no improvement took place. The spinal fluid was cloudy, showing an increased cell count, polymorphoneuclear leucocytes predominating. On account of these findings mastoidectomy was performed, very little pus being found in the pneumatic cells and antrum. A couple of days later the patient died. The autopsy showed a localized meningitis at the site of the affected ear. Similar cases were described recently by Otto Mayer.[2] Among these cases is one especially interesting, because it came under observation of an otologist from the very beginning of the morbidity.

A fourteen year old boy complained of earache. The otologist was consulted immediately. He made a diagnosis of beginning otitis media. The temperature was

100 degrees followed by a rise in temperature to 101 the same evening. A paracentesis was done. Two days later nystagmus and dizziness set in, with diminution of the hearing, so that a whispering was heard at a distance of two meters only. Kernig's sign was positive, and the spinal fluid cloudy. Thereupon mastoidectomy was done. In the mastoid process large cells were found, but no pus, and in the antrum a hemorrhagic exudate (streptococcus). Death followed fourteen hours after the operation.

Another case which came under my observation shows also how fast complications can develop.

This patient had terrific earache ten days after a normal childbirth. She was still in the hospital and therefore was also observed from the beginning. Examination a few hours after the onset showed a much inflamed ear drum with bleb formation. A paracentesis was done, hemorrhagic exudate escaped, and the patient obtained temporary relief. Two days later the temperature rose to 102, the pain increased, and there was tenderness over the mastoid process. The discharge from the paracentesis opening being very scant, a second paracentesis was done, and again a temporary relief followed. But the temperature remained high on the following day, the tenderness over the mastoid process was more marked, and at the tip of it a swollen area was noted, which indicated a probable perforation through the bone. On account of this, mastoidectomy was done. Pus was found in all the pneumatic cavities, especially at the tip, but no perforation. The sinus was free. Two days after the operation the temperature was close to normal, and the patient made an uneventful recovery.

In this case there was a fully developed mastoiditis on the fifth day after the onset. Usually this kind of a complication is hardly to be expected before the second or third week after the onset. The childbirth may have played a part in this case. The resistance was lowered and therefore the local infection of the ear could spread much quicker in the neighborhood and developed a complication in such a short time.

The opposite course in otitis media, I observed just recently in a ten year old boy.

This patient had repeated attacks of earache for a week before I saw him. Upon examination I found an inflamed ear drum with bleb formation, and besides a swelling in the temporal region extending over the zygomatic process to the external canthus, moderate tenderness, and a temperature of 100 degrees. The mastoid process itself was not tender, so we had an acute otitis media with the onset of complications in the bony structure. Here the pneumatic cells were abnormally located in the temporal region, and there the bone involvement originated. Paracentesis was done immediately and a considerable amount of purulent fluid escaped. Hospitalization was advised for further observation. The pains decreased, but the swelling over the zygomatic process increased, involving the whole temporal region and right eye, which showed a marked edema of the lid. The temperature was stationary. Operation seemed to be unavoidable, and was recommended by a consultant; but further observation was justified, because we know that such cases seldom cause any intracranial complications like sinus thrombosis or a brain abscess. The next few days showed marked improvement in the condition of the ear drum, the inflammatory process ceased, the discharge decreased, the temperature became normal and there was less pain over the swollen area. The patient made an uneventful recovery from then on.

In this case, according to rules generally applied, surgical intervention would have been indicated, but close clinical observation saved the patient from it.

Paul Hopkins[4] from St. Mary Victoria Hospital in Berlin, recently published statistics of 303 cases of acute otitis media which had been operated. His statistics are based from the onset to the time of operation. He divided them into three groups according to the time of operation, whether during the first, or second, or third week (or later) following the onset of symptoms. In his experience it did not make a great deal of difference at what stage these patients were operated upon, as far as probable complications, like sinus thrombosis, brain abscess, meningitis, and mortality were concerned. On the contrary he found a greater mortality in patients who were operated during the first week following the onset. The reason for this he believes, is the virulence of the infection, and a low resistance of the individual in the first week.

It was thought that roentgenology would be of a great help in determining the right time for surgical intervention in acute otitis media. But our expectations were not quite fulfilled. For instance in children, radiology is of very little help, because we find not infrequently in the first stage some haziness in and density of the mastoid process, which may lead to false interpretation and in turn to an unnecessary operation. In children apparently every otitis media shows some effect on the mastoid process, but in nearly 90 per cent of these cases all these symptoms subside without any further complications.

In adults, the radiogram shows us the distribution of the air cells in the mastoid process. Pathologic conditions in the mastoid may cause bony destruction which would be indicated in the radiogram by increase in density. But in normal cases there are variations in the air content of the mastoid process, which is reflected in the radio-

gram, without meaning that pathology is present. In advanced cases of mastoiditis, the radiogram gives us full information about bone destruction, confluence of mastoid cells and formation of abscess cavities. But in this stage the clinical symptoms are usually so outspoken that a correct diagnosis can be made without a radiogram, and the proper treatment instituted.

In spite of all the technical help which is at our disposal nowadays, we still have to rely on the clinical findings and personal experience, more than on anything else, to determine when operative treatment is indicated in complications of acute otitis media, and so we may draw the following conclusions:

1. It is impossible to decide at the onset, whether a case of acute otitis media belongs to the group where early surgical intervention is necessary, or to a group where conservative treatment has its place.

2. Painstaking clinical observation only can decide the right moment for operative procedure.

3. Complications like meningitis, sinus thrombosis, brain abscess, can occur at any stage in the course of otitis media.

4. The end results of the treatment of acute otitis media do not vary a great deal, whether the case has been operated in the early or late stage. Apparently the more conservative method has produced better results than the more radical one.

REFERENCES

1. Neumann, H.: Zur Klinik u Pathologie der Acuten Otitis Media, Monatsschrift für Ohrenheilkunde, March, 1928.
2. Mayer, Otto: Zur Klinik u Pathologie der Acuten Otitis Media, Monatsschrift für Ohrenheilkunde, March, 1928.
3. Neumann, H.: Fruehkomplikation von Otitis, Monatsschrift für Ohrenheilkunde, June, 1928.
4. Hopkins, Paul: Beitrag zur Fruehoperation bei Akuter Mastoiditis, Monatsschrift für Ohrenheilkunde, January, 1929.

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## VIGANTOL NOT ACCEPTABLE FOR N. N. R.

When reports of experimental clinical studies made it apparent that irradiated ergosterol preparations would be offered for therapeutic use, the Council on Pharmacy and Chemistry undertook to select a name for this vitamin D bearing product. The Council did this so that products of this kind might be marketed under a single name and thus the confusion avoided which inevitably results when the same product is marketed under a multiplicity of names. The Council adopted "Viosterol" as the New and Non-official Remedies name for irradiated ergosterol and the name "Viosterol in oil 100 D" to designate a preparation containing the substance dissolved in oil and having one hundred times the vitamin D potency of a standard cod liver oil. Four firms have made their products acceptable under the Council name for inclusion in New and Nonofficial Remedies. The Winthrop Chemical Co. is offering to physicians of the United States a brand of viosterol in oil 100 D under the proprietary name "Vigantol." The Council declared "Vigantol" unacceptable for New and Non-official Remedies because the application of a proprietary name to a preparation of irradiated ergosterol is contrary to the best interest of the medical profession and of the public. (Jour. A. M. A., February 8, 1930, p. 410.)

## HERNIAL (INYECCIONES PROLIFERANTES OBTURADORAS DEL DR. E. PINA MESTRE) NOT ACCEPTABLE FOR N. N. R.

The Council on Pharmacy and Chemistry reports that the product "Inyecciones Proliferantes Obturadoras," stated to be manufactured by Dr. E. Pina Mestre of Barcelona, Spain, was presented to the Council for consideration under the name "Hernial" by the Vincent Ruiz Co., New York. According to the information submitted by this firm, "Each ampule contains approximately 98% of alcohol, and the balance consists of the following ingredients expressed in percentages: 25% Krameria, 16% Katechu, 15% Rosa Canina, 15% Rosa Centifolia, 14% Vaccinium Myrtillus, 15% Monesia." The preparation is proposed for use by injection in the treatment of hernia. The Council declared Hernial (Inyecciones Proliferantes Obturadoras del Dr. E. Pina Mestre) unacceptable for New and Non-official Remedies because it is an unscientific, indefinite and complex mixture of astringent drugs proposed for use in the treatment of hernia, for which unwarranted claims are advanced and the use of which is not warranted by the available evidence but, on the contrary, is considered to be dangerous. (Jour. A. M. A., February 1, 1930, p. 339).

# PROBLEMS IN PLASTIC SURGERY OF THE NOSE*

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PATIENTS who present themselves for the correction of nasal deformities are usually of three types: (1) those with some minor deformity, the result of an injury, such as a humped or crooked nose, or a nose that it too long, too short or too broad; (2) those with a major defect such as a marked saddle-back deformity, or loss of the ala or the greater part of the nose from syphilis, or the result of malignant destruction, and (3) those with an imaginary deformity which to them is marked, and about which they are extremely sensitive. Patients in the third group are usually psycho-neurotic, and require careful treatment. I am reporting here six cases, that are illustrative of some of the problems in the surgical treatment of nasal deformities.

## SADDLE-BACK NASAL DEFORMITY

*Case 1.*—A girl, aged eighteen years, came to The Mayo Clinic October 21, 1929, for correction of a saddle-back nasal deformity. Her nose had been injured ten years previously, and an abscess had formed and required drainage. The saddle-back deformity had resulted. Treatment had not been given.

Examination revealed the tip of the nose to be turned up (Fig. 1). The septum was not markedly deformed. The Wassermann reaction of the blood was negative. Operation was performed, October 24, 1929, under intratracheal ether anesthesia, at which time a full thickness of the cartilage of the right eighth rib was removed. The wound of the thorax was closed in the usual manner with catgut, silkworm and dermal sutures, leaving a silkworm drain for a few days to take care of any oozing that might occur. A pressure dressing with adhesive plaster was used over the lower part of the thorax. The skin and subcutaneous tissue over the tip and the bridge of the nose up to the glabella was well freed by means of dissecting scissors, through a small incision just below the tip of the nose. After the cartilage had been shaped to conform to the deformity, it was inserted through the incision. The wound in the nose was closed with dermal sutures. A splint or pressure dressing was not applied. Figure 2 shows the postoperative result.

*Case 2.*—A woman, aged forty-six years, came to the clinic, June 12, 1928. One year previously the patient had been injured in an automobile accident, receiving a fracture of the base of the skull and of the lower jaw, a compound fracture of the nose, and several lacerations of the face. Immediate emergency treatment had been given, but nothing further had been done for the nose. The patient desired a plastic operation to correct the external nasal deformity as well as the difficulty in breathing through the nose.

Examination revealed a posttraumatic deformity of the nose with a marked saddle-backed nasal deformity (Fig. 3). There was displacement of the nasal bones to the right and considerable thickening of the lower part of the bones on the right side. A scar was present across the nose, extending from below the left eye across the bridge to the right cheek. There was complete atresia of the right nostril, partial atresia of the left nostril and complete traumatic atresia of the left external auditory canal. General examination disclosed chronic cholecystitis with stones, and adenomatous goiter without hypertension.

The patient was operated on June 16, 1928, at which time both nasal bones were refractured and reset in position. An opening was made into both nostrils and rubber tubes were inserted in order to maintain the openings. A copper splint was applied, with a dressing of adhesive plaster. The bones healed nicely in their new position. On July 10, the atresia of the left external auditory canal was freed and the scar was dissected out as thoroughly as possible. A number 18 French catheter was inserted into the canal. The patient was dismissed three weeks later with the rubber tubes still in position in the nostrils and the canal of the ear to be replaced and taken care of by her home physician.

The patient returned, January 3, 1929, with an excellent result of the external nasal deformity. She was still wearing the tubes in the nose, but she had practically a normal ear canal.

July 10, 1929, the patient returned again for correction of the external nasal deformity. By means of intratracheal gas anesthesia a large piece of cartilage was removed from the right eighth rib. The patient was very fat, which made the removal more difficult than usual. The cartilage was inserted to elevate the saddle-back nasal deformity through a small incision just below the tip of the nose. Figure 4 shows the postoperative result.

*Comment.*—Case 1 represents the deformity that occurs following injury before the nose was fully developed, and case 2 represents the deformity following injury after the nose has developed. Traumatic atresia of the nostrils and the external canal of the ear are best taken care of by means of rubber tubes. The size of the tubes may be increased from time to time, until the nostril or external canal is as large as is thought advisable. It is usually necessary to leave the rubber tubes in place for at least six months. Then the tube should be left out for

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short periods and replaced if there is any tendency for the opening to contract, the period of time the tube is left out being gradually lengthened. Although a full-thickness skin graft or a Thiersch graft may be used on the rubber tubes in the nose, the tube alone gives satisfactory results.

1 2

Fig. 1 (Case 1). Traumatic saddle-back nasal deformity, the result of an injury when a child; the turned-up nose is shown.

Fig. 2 (Case 1). Postoperative appearance after cartilage implant.

Cartilage or cartilage with bone, as advocated by Carter, is the most satisfactory material for the correction of saddle-back deformity. It is always advisable to take a full thickness of the rib, no matter how small the deformity. Small portions elevated from one side of the rib usually are of little value. The perichondrium is always removed, except in cases in which it is left in place in order to give that portion of the implant a curve or concavity. In case 1, the turned-up nose was corrected by lengthening it with cartilage.

The most important part in the correction of this type of deformity is the fitting of the cartilage to the remaining portion of the nasal bones. Accurate observation of the outline and slope of the nasal bone where the cartilage implant will approximate is necessary. Although various sites may be selected for an incision, the small incision below the tip of the nose, similar in shape to a flying bird, seems to be the most satisfactory. These patients experience very little local reaction. They are usually uncomfortable and in bed for a day or so on account of the removal of the rib. The sutures in the nose are removed on the third or fourth day.

### SCOLIOTIC OR HUMPED NOSE

*Case 3.*—A woman, aged twenty-eight years, came to the clinic, September 17, 1928, for the correction of a deformity of the nose which had been present since birth. Originally her nose had been large and broad with a hump in the bony bridge and a long tip. Six years previously her nose had been injured in a basketball game, a minor fracture being sustained. This did not seem to change the deformity. The patient was anxious for improvement.

3 4

Fig. 3 (Case 2). Traumatic nasal deformity with complete atresia of both nostrils and displacement of the nasal bones, corrected by means of refracturing the nasal bones, placing of rubber tubes in the nostrils, and later, a cartilage implant.

Fig. 4 (Case 2). Postoperative appearance.

Figure 5 shows the deformity at the time of examination. Operation was performed, September 21, 1928, under local anesthesia with 0.5 per cent procaine. An incision was made, inside the vestibule of the nose on both sides, and the entire subcutaneous tissue and skin was freed over the dorsum and lateral portions of the nose. The hump was removed by means of a heavy bone forcep. The nose was shortened and the tip was raised by removing a V-shaped piece from the septum and lateral alar cartilages, closing the incisions with mattress silk sutures. Figure 6 shows the postoperative result.

*Case 4.*—A man, aged twenty-nine years, came to the clinic, October 1, 1924, for the removal of a nasal hump. The patient had fallen and struck his nose at the age of three years, and a thickening formed at this point which gradually increased. Two weeks previous to examination, the patient was struck on the nose with a croquet ball, which apparently accentuated the deformity.

Examination revealed a marked hump extending from the glabella down to about 0.5 cm. above the tip of the nose (Fig. 7). The nose was markedly thickened laterally. A deflected septum completely obstructed the right side of the nose.

October 4, 1924, submucous resection was done under local infiltration and block anesthesia. October 13, the tissues were freed over the bridge of the nose, and the

bony hump, which stood up 1.5 cm. and extended from the glabella down to just above the tip, was removed by means of bone forceps. Figure 8 shows the postoperative result.

*Comment.*—The correction of minor deformities, as shown in these two cases, has a definite place in plastic surgery of the nose. In case 3, although the deformity was not marked, the patient was sensible and felt that the correction of this slight deformity was well worth while. In these cases it is well for the patient to understand just how much to expect. It is of little use to tell the patient to go home and forget the deformity, as most of these patients know just what they want done, and are perfectly satisfied if the work is done correctly. In Case 4, the deformity was more obvious, and the correction put the patient in a much better position to earn a living. The use of rasps in these cases frequently stimulates overgrowth of bone which appears secondarily, so that removal of the humps of bone with saws or bone forceps is the preferable method.

5 6

Fig. 5 (Case 3). Slight nasal deformity; the slight hump and the long tip of the nose are shown.

Fig. 6 (Case 3). Postoperative appearance after removal of the hump by an intranasal incision and shortening the tip.

7 8

Fig. 7 (Case 4). Marked hump of the bridge of the nose, following injury.

Fig. 8 (Case 4). Postoperative appearance after removal of the hump by means of an intranasal incision and bone forceps.

### SYPHILITIC NASAL DEFORMITIES

*Case 5.*—A girl, aged seventeen years, came to the clinic originally, November 29, 1921, on account of hereditary syphilis. At that time there was complete loss of the columella and the bony and cartilagenous septum. She had been given antisyphilitic treatment for a long time, until it was thought advisable to attempt to correct the deformity.

At the time of examination, March 16, 1925, there was a saucer-shaped deformity of the face with flattening of the nose and upper lip (Fig. 9). There was loss of the columella as well as of the lining of the tip and both alæ. The cartilagenous and bony septum was entirely gone.

Several plastic operations were done in an attempt to correct the deformity in a conservative way, with little real benefit. It was decided to raise a flap from the forehead and then to bring it down, turning in the lower portion on itself in order to form the lost portion of the lower third of the nose and make a columella. The first operation to elevate the flap from the forehead, with a pedicle in the region of the glabella and the distal end running into the left forehead, was done February 4, 1929. After two weeks the flap was brought down into position, after the skin had been excised over the remaining portion of the tip and ala. The flap was turned in on itself to form the columella and ala on both sides of the lost tip. Rubber tubes were inserted in the nostrils to maintain the vestibule, and mattress sutures were carried through the skin to hold the nose and ala in position. A full-thickness skin graft replaced the distal portion of the flap on the forehead. After the flap had been in position about two weeks, it was partially cut across, and a few days later completely cut across and sutured back to the forehead. The suturing of the upper part of the flap on the nose was completed. Figure 10 (November 19) shows the postoperative result with the columella and nasal vestibules.

*Comment.*—Syphilitic deformities may be the result of congenital or acquired syphilis. In congenital syphilis the saucer-shaped face, with loss of the lining of the nose and the columella, is the most common deformity. The saddle-back deformity in these cases may be corrected in the usual manner, by means of a cartilage implant, but the saucer-shaped face usually requires the bringing forward of the nose and the upper lip

by means of an operation suggested by Blair. Replacement of the columella may be done by elevating a flap from the upper lip with a pedicle at its upper portion, and after the under surface is lined with a full-thickness graft, it may be brought up in position and sutured to the posterior surface of the tip of the nose. The wound

9 10

Fig. 9 (Case 5). Syphilitic nasal deformity; loss of the intranasal tissue and the columella.
Fig. 10 (Case 5). Reconstructed skin and lining of the nose forming a columella with a flap from the forehead.

in the lip is closed primarily. The loss of the entire lining of the nose in adults may be replaced by the use of dental compound covered with a Thiersch or full-thickness skin graft attached by means of a splint to the upper teeth, first freeing the entire skin over the nose and bringing it forward. This method was suggested by Gillies. The use of a full-thickness skin graft, however, gives a more dependable lining than the Thiersch graft. In case 5 the loss of the lower third of the nose, with the lining in the columella, was corrected by means of a flap from the forehead, following the method of Nélaton.

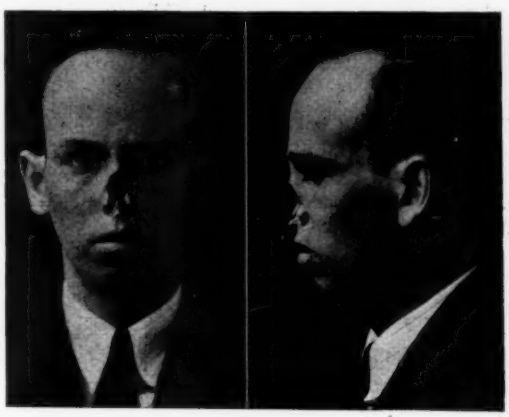
POSTOPERATIVE LOSS OF A PORTION OF THE NOSE

*Case 6.*—A man, aged thirty years, came to the clinic, February 13, 1928, because of a lesion on the dorsum of the nose, which had been present for five years and had been treated extensively with roentgen rays over a period of two years. Two roentgen-ray burns had developed on the dorsum of the nose and on the left ala. The roentgen-ray treatments were continued, alternated with different types of ointments. Following this he was treated by cautery and ultraviolet and infrared rays. The burns on the nose had become confluent, and an ulcer had been present which would not heal.

There was a crusted lesion over the tip and lower part of the nose, about 2 cm. in diameter, with some extension into the nasal cavity. The condition clinically was a low-grade squamous-cell epithelioma, which had developed in a roentgen-ray burn. The skin over the nose and forehead was very thin, almost like tissue paper, apparently the result of the roentgen-ray treatment.

Treatment of the epithelioma of the nose with surgical diathermy was recommended and this was done, February 16, under ether anesthesia. It was thought advisable to wait at least eight months before attempting reconstruction of the deformity that resulted.

The patient returned, October 23, 1928, for the reconstruction (Fig. 11, *a* and *b*). Although the skin over the forehead was very thin, it was thought that this was the most advantageous site for a flap. Skin from the arm was prohibited because of the profuse growth of hair. A flap was raised from the forehead October 24, and the middle portion of the flap was lined with a skin graft according to a method which I have described.[6]



*a* *b*

Fig. 11 (Case 6). Loss of the nose after removal of a squamous-cell epithelioma; *a*, anterior view; *b*, lateral view.

*a* *b*

Fig. 12 (Case 6). Postoperative appearance; (*a*), anterior view; *b*, lateral view; the reconstructed nose is shown; the nasal vestibules on either side allow free nasal breathing; there is lack of scarring of the forehead.

The last stage of the plastic work was completed, February 11, 1929. The length of time between the stages had to be increased, owing to the thinness of the skin and the fact that there was practically no subcutaneous tissue. Figure 12, *a* and *b*, shows the result. Cartilage was not utilized to raise the bridge of

the nose. This may be attempted if necessary at a later date.

*Comment.*—The difficulty of making a complete nose, as was done in this case, was a great problem until within the last few years, when the method of Nélaton, modified by Blair and reported by Ivy, made is possible to construct a fairly good looking nose in a comparatively short time. Although tissue from the arm or thorax may be used, the results are never quite as satisfactory as when a flap from the forehead is employed. It is best, in this type of case, to wait at least six months before attempting the completion of the plastic work, so that any shaping may be done, such as thinning out of the ala and columella and shaping up the nose laterally by removing subcutaneous tissue. In this case the skin was so thin that little was necessary, other than what was done at the time of the primary operation.

BIBLIOGRAPHY

1. Blair, V. P.: Personal communication.
2. Gillies, H. D.: Deformities of the syphilitic nose. Brit. Med. Jour., 1923, ii, 977-979.
3. Ivy, R. H.: Repair of acquired defects of the face. Jour. Am. Med. Assn., 1925, lxxxiv, 181-185.
4. Nélaton and Ombrédanne: Quoted by Ivy.
5. New, G. B.: Newer procedures and methods in plastic surgery of the face and neck. South. Med. Jour., 1926, xix, 138-140.
6. New, G. B.: Total rhinoplasty. Jour. Am. Med. Assn., 1928, xci, 380-381.

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## UDGA STOMACH TREATMENT

The formula of Udga is, apparently, secret—at least none of the advertising matter and follow-up letters give it. The Udga Medicine Co., which puts out this preparation, was formerly known as the Phungen Laboratories. The preparation is advertised as a mail-order treatment for stomach ulcer, gastritis and dyspepsia. From tests made in the A. M. A. Chemical Laboratory it appears that the preparation is similar in composition to the Pfunder Stomach Tablets which were found to contain bismuth subnitrate, magnesium oxide and sodium carbonate. (Jour. A. M. A., February 15, 1930, p. 504.)

## THE COFFEY-HUMBER CANCER TREATMENT

The publicity, given through Hearst newspapers primarily, to the Coffey-Humber cancer treatment has brought about the very type of injury to scientific research that was predicted. Regardless of the fact that Drs. Coffey and Humber have made it clear that their work is purely experimental and that they do not claim to have developed a cancer cure, the great trek of cancer sufferers across the continent has begun and physicians everywhere are besought by their patients to procure this remedy. (Jour. A. M. A., February 22, 1930, p. 562.)

## INTRAMUSCULAR IRON ARSENIC COMP. (NO. 201) AND (INTRAVENOUS) IRON, CACOD. AND GLYCEROPHOSPHATE (NO. 202) NOT ACCEPTABLE FOR N. N. R.

The Council on Pharmacy and Chemistry reports that a circular with the caption, "Formulas of definite therapeutic value," issued by Sci-Medico, Inc., New York, lists an extensive line of preparations marketed in the form of ampules and intended for intramuscular and intravenous administration and includes the following as having "proved useful in the treatment of anemia, nervous debility, neurasthenia, chlorosis and wherever a general tonic is indicated": (Intramuscular) Iron, Arsenic Comp. (No. 201), each 5 c.c. ampule being stated to contain Iron Cacodylate ¼ grain, Sodium Cacodylate ⅓ grain, Sodium Hypophosphite 3/16 grain, Manganese Hypophosphite 1/24 grain, Sodium Citrate ⅝ grain, and (Intravenous) Iron, Cacod. and Glycerophosphate (No. 202), each 5 c.c. ampule being stated to contain "Iron Cacod. (Colloidal)" 1 grain, Sod. Cacodylate 4 grains, Sod. Glycerophosphate 1½ grains. The Council declared these preparations unacceptable for New and Non-official Remedies because they are irrational mixtures marketed with unwarranted therapeutic claims. (Jour. A. M. A., December 7, 192, p. 1809.)

# AFFECTIONS OF THE ROUND LIGAMENT WITH REPORT OF A CASE OF DOUBLE TUBERCULOUS HYDROCELE

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AFFECTIONS of the round ligament are comparatively rare and when present arouse a keen clinical and surgical interest. The round ligaments of the uterus are so frequently dealt with in routine surgical practice that one is apt to consider them merely as structures to be used in adjusting uterine displacements and overlook the fact that various types of pathological processes may develop in them.

Upon reviewing the literature one finds that affections of the round ligament fall into two general groups. In the first group are the tumors which develop in the tissues of the ligament; and in the other group are affections originating in the tissues closely associated with the ligament and drawn into the inguinal canal by it. This latter group includes the cysts and hydroceles of the round ligament.

Tumors are the most frequent affection of the round ligament and they may be either benign or malignant. These tumors are classified as intra-abdominal and extra-abdominal. The extra-abdominal tumors are further divided into: (1) intravaginal growths that push the posterior wall of the canal of Nuck forward and are therefore retroperitoneal; (2) intracanulicular growths situated between layers of the muscles without any connection with the vaginal process of the peritoneum, and (3) preinguinolabial growths situated in front of the external inguinal ring or even in the labia majora. These tumors usually develop in the extra-peritoneal portion of the ligament. The majority of these tumors resemble fibroids of the uterus in point of origin. Malignant tumors practically all consist of malignant degeneration of a fibromyoma and the small round cell sarcoma is the type most frequently found.

In 1914 Taussig[1] reported a case of spindle cell sarcoma of the round ligament and in addition collected five cases from the literature. He states that the round ligament sarcomata are slow growing and are only slightly malignant. He found no cases in which metastasis was described and was unable to find any record of recurrences after operation. In this group of six cases there was only one post-operative death, and that was in the first case recorded. Considering these findings one naturally would be rather encouraged regarding the prognosis in sarcoma of the round ligament, but in 1918 Mönch[2] reported a sarcoma of the round ligament which, within a few months, developed to the size of a child's head. The tumor was removed but the patient died eight weeks later from metastases to the abdomen and the brain. The very rapid course of development of this tumor and death following eight weeks later shows very conclusively the extreme malignancy of the growth. The glands removed at operation were small and showed inflammatory changes. Mönch[3] removed a tumor of the round ligament which proved to be a myofibroma undergoing sarcomatous degeneration. At the time of operation there was no evidence of sarcoma in either the ligament or the inguinal glands but the degree of malignancy of this growth was made evident by the patient's death eight weeks after the operation. It is fortunate that these cases of extreme malignancy have been brought to our attention for if we were to be guided by the results of the cases collected by Taussig our views as to the prognosis of sarcoma of the round ligament would be very optimistic until our ideas were changed by personal experience with this very malignant type of tumor.

In 1903 Emanuel[4] collected eighty cases of round ligament tumors and found that twenty developed intra-abdominally and the remainder were located either in the inguinal canal or the labial fold. Taussig[1] later added sixty-one cases, and of this number eighteen were intra-abdominal and thirty extra-abdominal. These tumors may be multiple and they occur three or four times more often on the right side than on the left. The intra-abdominal tumors usually spring from that part of the round ligament that is nearest the uterus and are very often pedunculated and give symptoms such as are caused by a subserous fibroid or a solid ovarian tumor. The size of these tumors varies considerably and they may be very large before any symptoms are

experienced. They usually assume a round or oval shape and are of a firm consistency.

Ward[5] reported a case of fibroid of the round ligament which weighed three pounds and eight ounces. This tumor arose 3 cm. from the horn of the uterus and the patient had been conscious of a growing mass in the abdomen for six months. The fact that these tumors may develop to considerable size in a comparatively short time is further shown by a most interesting case described by Taddei.[6] This patient had noticed a small hard mass in the right inguinal region for eighteen months and during the five months previous to her examination the tumor grew to the size of an egg-plant. He describes the tumor after extirpation as a fibromyoma. The rapid growth was verified by the microscopic examination as showing the connective tissue to be edematous and growing in between the smooth muscle fibers until the process reached a stage of a most accentuated lymphatic edema with the result that the muscle bundles of the tumor were disassociated.

Tumors in this locality have many of the same peculiarities as tumors developing in other parts of the body. This is shown by the foregoing cases in which a large tumor developed in a few months from a small quiescent nodule. It has been demonstrated further that the growth of these tumors may be stimulated at times by variout local influences. Soli[7] describes a case in which a small tumor had been noticed in the right inguinal region for eight years and this tumor did not change in size until the sixth year, at which time the patient became pregnant and after the fourth month the tumor began growing. It extended to the labia majora and became very painful. It has further been pointed out by Von Zur-Muehlen[8] that direct trauma may play an important role in causing these tumors to grow. Kolb[9] has described a case of fibromyoma of the round ligament that was found when the patient was operated upon for a fibromyoma of the uterus. Thirteen years previously a suspension operation was done for retro-displacement of the uterus. In attempting to explain the occurrence of this round ligament tumor Kolb states that the development of the uterine tumor caused tension on the round ligaments and at the point of attachment to the uterus some of the muscle cells were drawn away with the ligament and the development of the cells resulted in the fibromyoma of the round ligament.

Another type of tumor found in the round ligament is the adenomyoma, which is comparatively rare. This condition was first described by Cullen[10] in 1896. These tumors occur about four times more frequently in the round ligament than in the uterus. They usually are located in the region of the external ring and consist of a firm nodule intimately blended with surrounding adipose tissue. It is most commonly found during the child-bearing period, is slow growing and usually causes little annoyance until it becomes large enough to cause pain on walking or during menstruation. The discomfort evidenced on walking is explained by the intimate association of the tumor with the surrounding tissues. During menstruation these frequently increase in size and become painful, diminishing in size when menstruation ceases. The increase in size of these tumors during the menstrual period is supposed to be due to functioning of the glands as the contents of the glands removed at operation is frequently hemorrhagic. In a series of 141 tumors of the round ligament collected by Taussig there were nineteen cystic tumors found in which the cyst was surrounded by a fibromuscular tissue and three of these cysts contained blood and were classified as hematoma.

Cullen[11] states that there is a difference of opinion as to whether these tumors are derivatives of the Wolffian or the Müllerian duct. Some authors claim that portions of the Wolffian duct have been constricted off during the development of the embryo and have been carried down the round ligament and then developed in later life. They base their opinion on the fact that the Wolffian duct comes in close contact with the round ligament prior to its descent into the inguinal region. They further believe that the gland elements of the adenoma bear some resemblance to portions of the Wolffian duct. Those holding the other view feel that there is strong evidence that misplaced portions of Müller's duct are responsible for the growth of these tumors. It has been known that the glands in these adenomyomata often times cannot be distinguished from normal uterine glands. They are small, round, and lined with cylindrical ciliated epithelium and are surrounded by the characteristic stroma of the normal uterine mucosa. Another point in favor of the Müller's duct origin is that these adenomyomata resemble in every particular the diffuse adenomyomata of the uterus in which the glands are seen to be a direct

derivation of the uterine mucosa. There is no other place in the body in which mucosa similar to normal uterine mucosa is found and furthermore no other mucous membrane that periodically discharges blood. Cullen does not believe that it can be definitely stated that these growths are not derived from remains of the Wolffian duct but he believes the evidence is much in favor of the Müller duct origin. He cites a case in which menstruation commenced on May 18 and ceased May 23 or just three days before operation. On examination of the extirpated tumor the glands were found filled with fresh blood.

Dermoid tumors are found in many different localities but very rarely are they found involving the round ligament. Maccabruni[12] describes a case of a dermoid cyst connected with the round ligament. The condition was diagnosed as a probable right inguinal hernia of the ovary but this was changed to cystic tumor of the round ligament. The mass was the size of a pigeon egg, and gave no symptoms except pain during menstruation. The tumor was found to be so intimately connected with the right round ligament that the anterior portion of the ligament formed the posterior wall of the cyst. Maccabruni[12] brings out the fact that the tumor was formed of only one layer while the ovarian dermoids are formed of either two or three layers. As all extra-peritoneal dermoids spring from one layer he points out that it is probable this tumor arose from the ectodermic layer and progressed inwards invloving the round ligament secondarily.

The cysts and hydroceles of the round ligament may well be considered together as they both comprise a collection of fluid in the canal of Nuck. The hydrocele of the round ligament is not classified by Emanuel[4] as a distinct tumor development because it develops in the canal of Nuck and not from the tissues of the round ligament itself. The explanation of this process is clarified by a review of the anatomy[13] of the round ligament. The two round ligaments are rounded cords between four or five inches in length, situated between the layers of the broad ligaments in front of the Fallopian tubes. This ligament passes forward, upward and outward through the internal abdominal ring along the inguinal canal to the labia majora, in which it becomes lost. It consists principally of muscle tissue extending from the uterus, also of some fibrous and areolar tissue besides blood vessels and nerves enclosed in a duplicature of peritoneum in the form of a tubular process, for a short distance into the inguinal canal. This process is called the canal of Nuck. It is generally obliterated in the adult but sometimes remains patent even in advanced life.

The cystic affections of the round ligament are very apt to present more diagnostic difficulties than the tumors that have previously been considered. Tumors arising from the intraperitoneal portion of the round ligament may attain considerable size before giving rise to any symptoms and even then it would be very difficult to differentiate absolutely this condition from many types of pelvic tumors as the clinical picture is usually the same. In the early stage any affection of the extraperitoneal portion of the ligament is frequently mistaken for a hernia and very often these cases are fitted with a truss. Some authors feel that the wearing of a truss stimulates the growth of these tumors. The cysts and hydroceles of the round ligament are more difficult to differentiate from a hernia than are the hard, firm tumors.

In 1916 Hines[14] reported a cyst of the right round ligament. The patient noticed a swelling in the right groin and she complained of increasing tenderness in the mass. Examination showed a slightly fluctuating swelling, protruding from the external ring, which gave some tenderness on pressure. There was no cough impulse nor was there any signs of inflammation such as might be expected in acute adenitis or abscess. There was no intestinal symptoms suggestive of interference with the fecal current and no history of trauma. A tentative diagnosis was made of an encysted omentocele. At operation the tumor was found to fill the lower part of the inguinal canal and projected for some distance beyond the external ring. Hines believes that the cyst was due to an accumulation of fluid in the lower end of the canal of Nuck which may have been persistent through its entirety at one time and subsequently closed at some point in the inguinal canal. A very similar case is reported by Johnson[15] and at operation a hydrocele of the round ligament was found.

When the tumors or growths become larger and give rise to pressure symptoms with a dragging sensation and radiating pains down the legs

the difficulties of diagnosis are very much eleviated.

A diagnosis of any round ligament affection should be sufficient for us to advise operative measures. In the first place these small, apparently innocent nodules may in a short time develop to considerable size and in addition to causing the patient many troublesome symptoms the surgical removal becomes difficult. In the second place we know that the most common tumor of the round ligament is the fibromyoma and these tumors may at any time undergo a malignant change.

My interest in the affections of the round ligament was stimulated by the following case:

Miss L. P. came under my observation June 5, 1922. She is single, eighteen years of age, a student, and lives at home under very good conditions. Mother and father are living and well; two brothers also living and well. One sister died at the age of twenty from sarcoma of the uterus. Aside from minor ailments as a child the patient states that she was well until the Spring of 1921. At that time she suffered an attack of pain in the upper left chest anteriorly. This was accompanied by dyspnea. This lasted off and on until June of the same year, though it was never severe enough to keep her home from school. Her family physician made a diagnosis of dry pleurisy. In the Spring of 1922 this condition returned and affected the lower left chest anteriorly and laterally. She states that she still notices some slight discomfort in this region, especially on coughing. At the present time the patient complains of a swelling in both inguinal regions. On coughing there is pain across the lower part of the abdomen and in both inguinal regions. There is also dysuria and malaise. Menstruation is regular; duration five days; moderate flow; no pain. Last menstruation was May 10, 1922.

In March, 1921, she noticed a swelling in the left inguinal region. This was about one and one-half inches in diameter, soft, not tender and disappeared on pressure. There was no discoloration. This mass gradually increased in size. In March, 1922, she noticed a swelling in the right inguinal region. This likewise was about one and one-half inches in diameter and similar in all respects to the mass on the left side. It seemed to be increasing in size at about the same rate as the left side. About a year after the appearance of the mass on the left side she noticed pain in the inguinal regions and across the lower part of the abdomen when she coughed. This was the first discomfort she had experienced. In March, 1922, at the time the mass on the right side became evident, she was fitted with a truss with a pad on each side. About this time a marked dysuria developed. This consisted of a dull aching pain which occurred just at the completion of the act of voiding and lasted for two or three minutes. This pain was located in the lower abdomen and was more especially felt in the swellings in the inguinal regions. This pain was so severe that she had to assume a bent position for relief. This pain has persisted to the present time and has neither increased nor decreased in severity. Patient states that for the past few months she has tired more easily and she feels under par.

*Physical examination.*—The patient is a well developed and well nourished female but appears somewhat anemic. Weight 140 pounds. Temperature normal. Pulse 86. Systolic blood pressure 108; diastolic 72. Head and neck normal. Lungs show no areas of dullness and there is a normal respiratory murmur throughout. Heart not enlarged. No murmurs. Abdomen is flat. No scars. No areas of tenderness. No masses palpated. Rectal examination revealed the uterus in anterior position, movable, not enlarged. No masses or tenderness found in the adnexal regions. Examination of the inguinal regions showed the external rings to be relaxed and large. On inserting the finger into the canal a fullness was found that could not be completely reduced. When patient coughed a slight impulse was felt. When patient stood up a mass presented at both external rings. These masses were soft, not tender, and could be reduced into the canal. The mass on the left side was about a third larger than the one on the right side. Urine examination negative. Blood normal. A diagnosis was made of bilateral inguinal hernia with probable involvement of the bladder. Operation was advised.

*Operation* June 6, 1922, at the Ancker Hospital under local anesthesia. The right side was operated upon first. The usual incision for repair of an inguinal hernia was made. When the inguinal canal was opened a soft, apparently cystic mass was encountered. It extended to the external ring and was not reducible. The distal portion of the mass was first freed and the dissection carried upward. There were places where the wall was very thin and the cavity of the mass was opened at one point where it was densely adherent to the floor of the canal. The opening was immediately closed but a small amount of straw colored fluid escaped. When the mass was entirely freed it was found to lead to the internal ring. The peritoneum was located and was apparently normal and not involved in the pathologic process. The mass was then clamped at its lower limit and removed. The wound was closed in layers with cat gut sutures. There was some doubt in our minds as to the exact condition with which we were dealing and considering the possibility of a vesicle diverticulum a small soft rubber drain was introduced extending below the fascia. The left side was then operated upon and the same condition was found and was treated in the same way. An indwelling catheter was placed in the bladder. As soon as the examination of the removed specimens revealed the fact that no bladder tissue was present the indwelling catheter and drains were removed. Convalescence was uneventful and patient was discharged from the hospital June 19, 1922.

*Pathological Report.*—The specimens of tissue removed from the right and left inguinal canals consist of two cyst-like sacs with an outer rough layer and an inner smooth shining serous layer. These were

opened at one end and measured 7 × 3 and 9 × 4 cm., respectively. The walls are of variable thickness, ranging from 1 mm. to 3 mm. and appear transparent in the thinnest portions. Cross section shows the left to be multilocular and the right to be unilocular. The lumen is filled with a yellow, gelatinous material. The inner lining is smooth and shining but is thrown into irregular folds, is dark red in color and studded by minute yellowish nodules varying from 1 mm. to 2 mm. in diameter. These are firm in consistency and quite typical of miliary tubercles. Microscopic section shows the walls to consist of connective tissue carrying many blood vessels which are dilated and filled with blood. There are also a number of small hemorrhages into this tissue, and the occasional appearance of a few smooth muscle fibers. Scattered throughout are numerous tubercles characterized by endothelioid cells, giant cells and a rich infiltration with lymphocytes.

Diagnosis.—Tuberculous serous cysts.

After considering all the findings in the case a post-operative diagnosis was made of tuberculous hydrocele of both round ligaments. The two most important conditions forming a cystic tumor in this locality to be considered were adenomyoma and hydrocele of the round ligament. The pathological examination furnishes no evidence of an adenomyoma but it does show a cystile mass whose wall is formed by serous membrane. Such a finding in this region points at once to an accumulation of fluid in the canal of Nuck. The writer believes that in this case the canal of Nuck has remained patent and later became closed at some point in the inguinal canal and the incidence of the tuberculous infection at this point resulted in the development of the tuberculous hydroceles. It is impossible to determine the origin of this infection but the most reasonable presumption is that the attacks of pleurisy from which the patient suffered were due to a previous tuberculous infection which has since healed and become inactive. A most thorough search, both by physical examination and roentgen plates, failed to reveal any focus in the lungs. It is very probable that the primary focus was in the hilus and therefore difficult to demonstrate.

A very logical question arises as to the presence of any intra-abdominal tuberculosis which could have extended along this persistent peritoneal process. The patient has never had any disturbance or symptoms which a tuberculous infection of the pelvic organs, sufficient to give rise to such an advanced involvement as we have in this case, would produce. The patient undoubtedly would have had some symptoms directing our attention to this region and positive evidence would have been found on pelvic examination. The same facts apply to the question of a general abdominal tuberculosis. The peritoneum that was inspected at the internal ring, on both sides, at the time of operation was apparently perfectly normal. In an extensive search of the available literature I was unable to find any reference to the incidence of tuberculosis in connection with hydrocele of the round ligament. This is, then, as far as I am able to ascertain, the only case of tuberculous hydrocele of the round ligament to be reported.

BIBLIOGRAPHY


1. Taussig, F. J.: Sarcoma of the round ligament of the uterus. Surg. Gyn. and Obst., 19:218, 1914.
2. Mönch, G.: Ein Sarkom des Ligamentum rotundum; Deutsch. Med. Wchnschr., 44:1021, 1918.
3. Moench, G. S.: Sarcoma of the round ligament. Med. Rec., 97:652, 1920.
4. Emanuel, R.: Ueber Tumoren des Ligamentum rotundum uteri. Ztschi. f. Geburtsh., u. Gynak., 48:388, 1903.
5. Ward, W.: Large fibroid of the round ligament. Am. Jour. Obst., 77:152, 1918.
6. Taddei, C.: Sui tumori della regione inguinale nella donna e su quelle del legamento Rotundo in specia. La Clin. Chirug., 18:1828, 1910.
7. Soli, T.: Un caso di fibromioma della porzione extra-abdominale del legamento rotondo. La Med. Ital., 10:412, 1912.
8. Von Zurmuehlen, F.: Ein fibromyom des ligamentum rotundum uteri. Zntrlbl. f. Gynäk., 26:877, 1910.
9. Kolb, K.: Aetiologie der Fibromyome des ligamentum rotundum. Gyn. Runds., 4:782, 1910.
10. Cullen, T. S.: Adenomyoma of the round ligament and incarcerated omentum in an inguinal hernia, together forming one tumor. Surg. Gyn. and Obst., 22:258, 1916.
11. Cullen, T. S.: Adenomyomata of the uterus. W. B. Saunders Co., 250.
12. Maccabruni, F.: Cisti dermoide del canal inguinale in connessione col legament rotundo. Ann. di Ostet. e Genecol., 1:327, 1915.
13. Gray, H.: Anatomy, descriptive and surgical. Lea Brothers and Co., 988.
14. Hines: Cyst of the round ligament. Lancet Clinic., 115:277, 1916.
15. Johnson, J. A.: Hydrocele of round ligament. Lancet Clinic, 113:614, 1915.

# CASE REPORT

## THE DIFFERENTIATION BETWEEN ACUTE APPENDICITIS AND ACUTE PROSTATITIS AND SEMINAL VESICULITIS*

REPORT OF TWO CASES

WILLIAM P. HERBST, M.D.
*Minneapolis*

I would not venture to estimate the number of male patients who have undergone appendectomy for acute prostatitis and seminal vesiculitis, but they make up a much larger group than most of us would care to admit. Inasmuch as I have seen two cases recently in which the appendix was suspected, I am bringing this subject before the Society.

Chronic prostatitis and seminal vesiculitis occur in some degree in about 30 per cent of all adult males, and in only about 60 per cent of these is there an antecedent history of gonorrhea. When one takes into consideration the number of cases in which gonorrhea is superimposed upon a previously existing prostatitis and seminal vesiculitis, a reasonable estimate of prostates and vesicles infected primarily by the hematogenous route would be about 70 per cent.

The more common causes of non-venereal prostatitis are infected teeth, infected tonsils, and infected nasal sinuses. Less frequently, but nevertheless a factor in some cases, is intercourse with individuals harboring pathogenic organisms in their cervical secretions.

The results of cultural studies made by von Lackum in 405 cases in which prostatic secretions were examined were as follows:

| | |
|---|---|
| Sterile | 35.25 per cent |
| Streptococci | 35.25 per cent |
| Staphylococci | 22.25 per cent |
| Other organisms | 7.25 per cent |

Of infected cases, streptococci constituted 55 per cent, staphylococci 33 per cent, and other organisms 12 per cent.

In determining the presence or absence of prostatitis, a most satisfactory procedure is to examine microscopically some of the prostatic secretion obtained after prostatic massage with the bladder empty. The failure to obtain secretion is indicative of pathology and not of the absence of pathology, as is so commonly thought.

The lighting up of these chronic prostatic and seminal vesicular infections into acute conditions occurs in a certain number of cases and often suggests acute appendicitis, as is shown in the two following case histories.

*Case 1.*—Mr. E. M., thirty-seven years of age, married thirteen years, had gonorrhea ten years ago. He had had frequent sore throat. Two months before I was called to cystoscope him for pyuria with fever and lower left abdominal pain, he had an acute throat infection which was followed by abdominal pain which varied in location and for which one doctor had recently (within the previous week) advised appendectomy. When I saw him his complaint was lower left abdominal pain with slight nausea. His temperature was 99.4 degrees; pus (grade 1) was present in the urine and some tenderness (for the past few hours) in the left epididymis. W.B.C., 35,000. There were no urinary symptoms. The tonsils were red and cryptic. There was moderate tenderness throughout the abdomen, but this was more marked in the left lower quadrant. The left epididymis was quite tender. The prostate was normal in size with multiple indurated areas, and was exquisitely tender. The left vesicle was more tender than the right, but both were normal in size and consistency. The prostatic secretion was practically pure pus. I did not cystoscope him on account of the acute epididymis and the comparatively small amount of pus in the urine.

Following a somewhat stormy course, which was ushered in by the interne giving 5 c.c. of a stock vaccine instead of 3 minims, the acute condition gradually subsided so that the patient left the hospital in eight days. His tonsils were removed about three weeks later and although he has not followed advice as to adequate treatment for his prostatitis, it was reduced to a Grade 1 infection with pusless urine without further local treatment. His treatment could not be handled satisfactorily owing to the fact that he is a traveling salesman.

*Case 2.*—Mr. L. C., twenty-five years of age, medical student, had had scarlet fever and diphtheria in childhood, and occasional attacks of tonsillitis each year. No history of gonorrheal infection.

The onset of the attack was sudden, with headache, malaise, fever and chill, temperature of 103.8 degrees, pulse 120, and slight abdominal discomfort. The W.B.C. count was 14,000. The urine was negative. The tonsils were moderate in size and injected.

The next day when I saw him he felt about the same, but the temperature had fallen to 99.4, and the leucocyte count was 25,000. The abdomen was negative except for a generalized sensation of discomfort. The prostate per rectum was normal in size and consistency. The vesicles were normal in size and consistency but were extremely tender, especially the right, and pressure here produced a very severe pain in the right lower quadrant. Secretion obtained contained pus (grade 3), and the urine contained pus (grade 1).

The condition continued as a mild general abdominal discomfort, with occasionally transient frequency, pyuria from grade 1 to 3, and with a gradually receding leucocyte count under urinary antiseptics and semi-ambulant regime. A cystoscopy was done to rule out

*Read before the Minneapolis Surgical Society, at its meeting of November 7, 1929.

a small *x*-ray shadow in the right lower pelvis as a possible stone, and to obtain definite information as to the source of the pus. The urine from both kidneys was negative, and that from the bladder contained pus (grade 1). The shadow in the *x*-ray was demonstrated to be extra-urinary by the right pyeloureterogram.

This condition continued about the same for the next three weeks. On one examination I found what I thought to be definite tenderness over the appendix, and felt that he might have an infected appendix in conjunction with his prostatitis and vesiculitis. He had his appendix out as an interval appendectomy, and it was described as a retrocecal congested appendix, but it gave no evidence of inflammation upon very careful microscopic examination of sections.

About three weeks later he had his tonsils removed as an aid in doing away with a probable etiological factor in his prostatitis and vesiculitis.

In conclusion I wish to call attention to the occurrence of a leucocytosis in these cases and to mention the part the tonsillar infection may have played. I wish also to urge rectal palpation and microscopic examination of the prostatic secretion in all patients whose clinical picture does not conform to the typical acute appendicitis sydrome, before appendectomy is performed.

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## SOME ENERGEN FOODS NOT ACCEPTABLE FOR N. N. R.

The Council on Pharmacy and Chemistry reports that a line of "Energen" products, marketed by the Energen Foods Co., Ltd., England (Energen Foods Co., Inc., New York), distributor), was presented for consideration as "starch reduced" foods containing "an increased amount of protein in the form of gluten" and recommended for use in the dietetic treatment of "Diabetes, Obesity, Gastric and Intestinal troubles, in which it is essential to decrease the amount of starchy food, and in all conditions of debility or malnutrition where an increase of proteins is necessary." The Council found many unwarranted claims and other objectionable statements in the submitted advertising material. When these were reported to the firm, it stated that some of this advertising is no longer in use even in England and most of it has not been circulated in the United States. Assurance, however, was given that the advertising matter to which objection had been made has been discontinued or that it will be. The firm requested reconsideration, particularly of Energen Bread, submitting further advertising. After considering the further evidence, the Council declared Energen Bread, together with Energen Bismeal, Energen Cocoa, Energen Digestive Biscuits, Energen Endobran Biscuits, Energen Gluten Semolina, Energen Gluten Tapioca, Energen Macaroni, Energen Pastry Flour, Energen Starch-Reduced Bread (Batons), Energen Starch-Reduced Bread with Casein (Batons), Energen Starch-Reduced Rolls, Energen Starch-Reduced Rusks, Energen Starch-Reduced Wheatmeal Bread (Batons), unacceptable for New and Non-official Remedies because they are unscientific mixtures marketed with unwarranted therapeutic claims under names not correctly descriptive of their composition and in a way to invite their ill advised use by the public. (Jour. A. M. A., August 3, 1929, p. 381.)

## THE TWENTY-FIFTH ANNIVERSARY OF THE COUNCIL ON PHARMACY AND CHEMISTRY

At a meeting held February 3, 1905, the Board of Trustees of the American Medical Association created an advisory board to be known as the Council on Pharmacy and Chemistry. The organization of this Council was perfected on February 11, 1905. Thus the Council on Pharmacy and Chemistry passes the twenty-fifth year of its organization and continues, in a second quarter century, one of the most notable works for scientific medicine ever accomplished by any organized group. It is significant that several of the original members of the body have maintained their connection since its inception and that the secretary, W. A. Puckner, has rendered continuous service as a full-time officer for the body from the first. The Council could not have achieved what it has, without the support of the medical profession of our country. Thus, with the establishment of the Council, the advertising of medicinal preparations in the Journal of the American Medical Association was limited to those products that had been passed by the Council. The same rule has applied to the other publications of the Association, and finally every state medical journal, except those of Illinois and New York, followed this lead. A considerable number of journals not controlled by medical societies also give their support to the Council's work. The medical profession must support the Council or its work will be futile. The members of the Council serve without remuneration and The Journal of the American Medical Association tenders to them the thanks and appreciation of the profession that they have so well served. (Jour. A. M. A., February 8, 1930, p. 413.)

# PRESIDENT'S LETTER

PROBABLY the greatest need today of the rank and file of the medical profession is contact with each other, because contact brings an exchange of experiences and ideas. This stirs latent memories, inspires new interest in one's work, fosters good fellowship, promotes tolerance and respect for each other, teaches us to know our own shortcomings and to recognize the sterling worth of our professional neighbors.

Wherever men with common interests and purposes gather together to learn from each other, they soon discover that petty differences which had once kept them apart lose their magnitude in a new perspective or completely vanish amid the bigger and better things born of the collective search for knowledge. Surely it is permissible in this connection to quote from the Presidential Address by William Osler before the Medical and Chirurgical Faculty of Maryland: "No class of men needs friction so much as physicians; no class gets less. The daily round of the busy practitioner tends to develop an egotism of a most intense kind, to which there is no antidote. The few setbacks are forgotten, the mistakes are often buried, and ten years of successful work tend to make a man touchy, dogmatic, intolerant of correction, and abominably self centered. To this mental attitude the medical society is the best corrective, and a man misses a good part of his education who does not get knocked about a bit by his colleagues in discussions and criticisms."

A masterly expression is it not? But it applies to a considerable number of us, in the cities as well as in the country. Where it applies in the cities it is a greater reproach, for there contact is easily had with one's fellows. Whereas in the rural districts the doctors serving an extensive territory may be so widely scattered that, despite good roads and autos, a real sacrifice may be suffered in getting together. Yet the sacrifice is more than compensated by the resulting mutual understanding of each others problems, both social and scientific. It has been said that every doctor is known to be a thoroughly good fellow by everybody else except another doctor. If that be so then we doctors are allowing some very small personal envies and jealousies to cheat us out of the greatest of kindly sympathies, companionships and friendships that our poor human society has to offer.

The next meeting of the state society will be held July 14, 15 and 16 in Duluth.* The secretaries and presidents of the component societies can render their members a valuable service by persuading them to attend this meeting. Moreover the councillors, committee chairmen and officers of the state body wish to meet as many of the members as possible. They wish to talk over our common problems. They wish to learn at first hand what the men are thinking, what they want, how they think we can render our organization more serviceable both scientifically and socially.

S. H. Boyer

President,
Minnesota State Medical Association.

*REMEMBER THE DATE

# EDITORIAL


## MINNESOTA MEDICINE

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## ARE THE STATE DUES EXCESSIVE?

We are all concerned about the high cost of living. The question, however, of keeping expenditures within the limits of income resolves itself in most instances into the use of judgment in the matter of expenditures. The sum total of money foolishly spent by people in general is appalling. We physicians both individually and sometimes collectively are not exceptions in this respect.

The question has been raised in various quarters whether the money being spent by our State Association (and the yearly total has shown a marked upward trend in recent years) is being wisely expended. The Council of the State Association is the financial body of our organization and authorizes the expenditure of the income of the Association which for the most part consists of the dues voted by the House of Delegates. We members therefore, through our self-assessment have made possible the rather considerable sum available the past three years. The House of Delegates, realizing the need for more funds if the proposed program of expansion was to be carried out, voted the increase of state dues to $15.00 effective in 1927. Some members have begrudgingly paid the dues, but apparently few if any have given up their membership on account of the dues, judging from the membership roll, for in 1929 our membership was the largest in history.

Now just what has been accomplished with the $15.00 membership?

In the first place we have a real organization and a secretary in Dr. E. A. Meyerding who has not only the ability but the time to devote to Association affairs. We have a long list of committees that have been conscientious in tending to their duties and have undoubtedly been more efficient because of the aid given them by the organization in general and the secretary in particular.

The committee which has accomplished the most and naturally has spent the most, has been the Legislative Committee. Not one man in a thousand could or would have done the work that Dr. Herman Johnson has done with the legislature the past few years. And what has this committee accomplished? The prevention of undesirable legislation is usually the major part of legislative accomplishment and when it comes to legislation affecting medical affairs there has been no exception. Almost yearly the wild reformers calling themselves anti-vaccinationists and anti-vivisectionists have to be combatted; the establishment of new cults prevented; and the extension of the rights of medical cults already licensed has to be curtailed.

In 1925 this committee obtained a reduction in the statute of limitations from six to two

years to conform to the statutes in force in most of the other states of the union. The long period of six years has been responsible for the high incidence of malpractice suits in Minnesota which had reached such a point that one insurance company operating in the state was about to materially increase its rates. The yearly saving to physicians in this state has undoubtedly amounted to more than the full amount of our present state dues.

The Basic Science Law went into effect May 1, 1927. Since that time but two chiropractors and only twenty-one osteopaths have passed the Basic Science examinations, while during the five preceding years an average of forty-three chiropractors were yearly licensed in Minnesota. Fifty-one osteopaths were licensed during the six year period prior to this act. The law has apparently had the desired effect of barring the unqualified from becoming licensed in this state in the future.

The revision of the Medical Practice Act in 1927 effected certain needed changes in the old law. The yearly fee for registration of physicians has furnished the means of enforcement and that this means has been utilized is shown by the report of the investigating attorney that in less than two years ninety-eight cases have been investigated and twenty-seven cases brought into court with twenty-three convictions.

If it had not been for the legislative committee tax supported hospitals would have been opened to the medical cults; the laboratory of the Venereal Division of the State Board of Health would probably have been discontinued and a limit would have been placed by law on medical fees coming under the Industrial Commission.

The next most expensive committee of the Association has been the one on Public Health Education. The activities of this committee have been so diversified and its influence has been exerted in so many directions that the results are less tangible. They undoubtedly are nevertheless far reaching. The efforts of this committee have been to foster medical influence in the direction of the various health organizations in the state. This has been accomplished in part through county society committees on Public Health, by assisting health organizations in putting on approved programs and by assisting the Minnesota Public Health Association in the preparation of its publications and otherwise. Weekly newspaper service has been conducted throughout the state and radio talks have been furnished.

One of the worthwhile undertakings of the Association which should be mentioned is the Consultation Bureau conducted by Dr. W. A. O'Brien in Minnesota Medicine. The county secretaries' conference has been made possible by the increase in dues and the annual meeting is no small item of expense.

While we do not approve of extravagant expenditures by the State Association the above recital seems to substantiate the view that there has been value received. The whole question is whether we are to continue to be an organization which through its various agencies is going to make its influence felt, or whether the State Association is to revert back to its former condition of innocuous desuetude.

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## SCHOOLS FOR TECHNICIANS

The demand for X-ray and laboratory technicians has opened a new and attractive field, especially to young women with high school education and even in some instances to those with college degrees. The training of these technicians has presented certain problems which so far have not been solved.

The Council of Medical Education and Hospitals of the A. M. A. has investigated laboratories all over the country and has published a list of the laboratories they have approved as satisfying certain minimum requirements. Our University has in operation a four year course for the training of technicians. The real problem lies in the existence of laboratories which furnish poor training for technicians. Some of these institutions have been established by lay individuals, have no hospital connection and have therefore no methods of obtaining laboratory material for instruction, have a faculty composed of technicians or poorly qualified physicians, and are purely commercial enterprises. High pressure advertising methods are used and extravagant or dishonest claims made as to the kind of instruction furnished and the high salaried jobs awaiting graduates. Glowing accounts are given by field agents to groups of high school students in an effort to swell the enrollment of the school.

The present unsatisfactory situation was brought up in the House of Delegates at the last

State Medical meeting. The opinion was expressed that the State Association should take some steps to prevent the continuation of these humbug institutions in our state. The proposal that a committee of the State Association should issue certificates to technicians who had received proper training was wisely rejected when it was brought out that the State Association after issuance of such a certificate would not be in a position to use disciplinary measures if necessary. A State Committee on Schools for Laboratory Technicians was however appointed to investigate the situation and report at the next meeting.

This is a matter with which our Legislative Committee will doubtless be concerned as a bill was introduced in the last legislature proposing to regulate these technical schools. It failed to pass on account of certain technicalities, but is likely to be resubmitted at the next legislature. As Dr. Morris Fishbein stated at our last state meeting, there doubtless should be some legislative provision for the chartering of such schools. Just how this control should be exerted is a matter that deserves some consideration.

There is no question but that the director of an *x*-ray or medical laboratory which trains technicians should possess the background of a medical training. Isolated laboratory reports are dangerous. The supervision of laboratory training by an M. D. is also important in order to instill the proper viewpoint in the undergraduate mind. It goes without saying that the physician in charge should be in good standing in the medical profession.

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## PROTECTING CHILDREN FROM TUBERCULOSIS

The month of April has again been chosen by the National Tuberculosis Association for its annual prevention campaign. The above title is this year's slogan and a good one it is, for if the infants and children of today can be protected from the infection until adult age is reached a major problem in the anti-tuberculosis campaign will be solved.

Students of tuberculosis have changed somewhat their interpretation of the course of tuberculous infection. Many patients suffering from tuberculosis give a history of exposure to the infection in infancy and childhood with good health until early adult life is reached. On the other hand in many instances of adult tuberculosis the exposure is never traced. While most adult tuberculosis is the result of an infection early in life, an appreciable percentage of cases undoubtedly acquire the infection after the age of twenty.

From a practical standpoint the protection of infants and children from infection is a most important procedure in a prevention campaign. It is only through publicity measures that progress in this line can be made, and even though reiteration of the seriousness of the disease is likely to bring out neurotic tendencies in those so disposed, the campaign must be pushed.

The public is gradually being impressed with the potential seriousness of a chronic cough. Grandpa with his hacking cough is persuaded to be examined. The cigarette cough may not be as harmless as supposed. The affectionate friend who insists on kissing children and on the mouth too is most unpopular with the young mother of today—and rightly so.

A pamphlet entitled "Childhood Types of Tuberculosis" just made available by the National Tuberculosis Association and which can be obtained from the Minnesota Public Health Association is a gem. It contains a rather reliable answer to the prevalence of tuberculosis in this country. An analysis of 51,000 school children below high-school age in cities and towns in Massachusetts showed that 28 per cent reacted to the tuberculin test; 1.5 per cent had childhood types of tuberculosis, and 3.4 per cent were classed as suspicious. The blanket statement that we all become infected with tuberculosis at some time or another is obviously erroneous.

One word of warning should, however, be uttered. The pamphlet mentioned states that "calcified lesions in children, however, indicate tuberculous disease." This statement, we feel sure, is not in accordance with the opinion of all authorities on this subject. Certainly the physician who is unfamiliar with the appearance of the *x*-ray of a normal child's chest has no right to cause unnecessary anguish on the part of a mother by a too ready diagnosis of pulmonary tuberculosis from an *x*-ray plate of the chest alone. Calcified glands at the hilus in a chest *x*-ray of a child with a positive tuberculin test may be the result of a tuberculous infection, but

it should be kept in mind that the shadow of a bronchus at the hilus may simulate a calcified gland. *X*-ray diagnosis of active pulmonary tuberculosis (requiring treatment) is in general an unsafe procedure, and this statement applies to early infancy and childhood.

## ASSOCIATE EDITOR

The Journal has been very fortunate in having had the services of Dr. Frederick W. Schlutz, Chief of the Pediatric Department of theMedical School, as associate editor for the past five years. He has had charge of the Progress Section of the journal, a department which should be of considerable interest to our readers, although conducted on a small scale as compared with the corresponding department in certain other journals. This department in Minnesota Medicine deserves more attention on the part of physicians throughout the state and it seems necessary from time to time to call attention to the fact that abstracts of current literature by members of the association are always welcome. Those interested are urged to get in touch with the nearest department head so as to avoid duplication.

With the departure this month of Dr. Schlutz to Chicago, his place will be taken by Dr. Lewis M. Daniel of Minneapolis. Dr. Daniel has been the editor of the new Hennepin County Bulletin and has kindly consented to assist with the editing of MINNESOTA MEDICINE. Heads of the various sections should submit abstracts directly to Dr. Daniel, 1853 Medical Arts Building, Minneapolis.

## T-A YIELDS SUBSTANTIAL RETURNS IN YONKERS

From January 1, 1926, to January 1, 1930, 20,538 children in the city of Yonkers were immunized against diphtheria. This resulted in a large reduction both in incidence and mortality, the former decreasing from 431 in 1927 to 66 in 1929, and the latter from 23 to 5 during the same period. Because of this diphtheria prevention work there was a marked decrease in the number of diphtheria cases treated at the Communicable Disease Hospital during 1929, resulting in a reduction in the amount spent by the hospital during the year of approximately $7,500.

The anticipated saving during 1930 over the amount spent during 1929 has been estimated at $9,400.

—*Health News*, Feb. 3, 1930.

## MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

### GRANITE FALLS WOMAN GIVEN JAIL SENTENCE FOR VIOLATING BASIC SCIENCE LAW

Marie Pederson, forty-two years of age, residing at Granite Falls, Minnesota, entered a plea of guilty to practicing healing without a basic science certificate.

Mrs. Pederson has been at Granite Falls intermittently for the past four years. She maintained an office in her living quarters on the East side of the river in Chippewa County. She was popularly referred to as the "Iodine Nurse." Several complaints were made to the State Board of Medical Examiners in refefence to this defendant. After an investigation by Mr. Brist on behalf of the Board, she was arrested and entered a plea of guilty. The Court sentenced the defendant to a term of 90 days in the Chippewa County jail, and placed the defendant on probation upon the condition that the defendant absolutely refrain from practicing healing in this State. The defendant's home is at Brandt, South Dakota.

Before sentencing the defendant, Judge Baker exacted a promise from the defendant concerning her conduct in the future, and made it very plain that she would serve every day of her sentence if she attempted to practice in this State in the future.

### MINNEAPOLIS WOMAN CONVICTED OF VIOLATING BASIC SCIENCE LAW

Mrs. Kathyrn Albers, 2527 Hennepin Avenue, Minneapolis, went on trial February 10, 1930, before a jury in the Court of the Honorable Gunnar Nordbye on a charge of practicing healing without a basic science certificate. The testimony disclosed that Mrs. Albers was using electrical appliances in giving treatments. Her defense was that she was exempted from the basic science law because she gave "mental and spiritual treatments."

The Court ruled, however, that the kind of treatments given by the defendant was a question of fact for the jury, and after deliberating only twenty minutes, the jury returned a verdict of guilty.

On February 13 Judge Nordbye sentenced the defendant to six months in the workhouse, and placed her on probation for one year. The defendant was given thirty days from that date in which to dispose of her equipment and get out of the business.

In event she does not comply with the order of the Court, the defendant will have to serve her workhouse sentence.

Judge Nordbye gave the jury a very splendid charge, and instructed them that the case was a very important one from the standpoint of the people in this State, and deserved the most serious consideration on the part of the jury.

# REPORTS AND ANNOUNCEMENTS OF SOCIETIES

## MEDICAL BROADCAST FOR THE MONTH

### The Minnesota State Medical Association Morning Health Service

The Minnesota State Medical Association broadcasts weekly at 10:15 o'clock every Wednesday morning over station WCCO, Minneapolis and St. Paul (810 kilocycles or 370.2 meters).

*Speaker:* William A. O'Brien, M.D., Associate Professor of Pathology and Preventive Medicine, Medical School, University of Minnesota.

The program for the month of April will be as follows:

April 2—Cancer Cures
April 9—White *vs.* Brown Bread
April 16—Safeguarding Motherhood
April 23—Code of Medical Ethics
April 30—Inflammation of Mastoid Bone

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## MINNEAPOLIS SURGICAL SOCIETY

Dr. A. T. Mann was elected president of the Minneapolis Surgical Society at the annual meeting held in March. He succeeds Dr. S. R. Maxeiner. Dr. Theodore Sweetser was named vice-president to succeed Dr. M. J. Lynch. Dr. H. O. McPheeters was re-elected to the position of secretary and treasurer.

Dr. J. M. Hayes was named to serve on the advisory committee for five years, while Dr. Owen Wagensteen was elected for four years to fill the unexpired term of Dr. Sweetser. Other members of the council are: Drs. R. C. Webb, W. D. White, E. Robitshek and S. R. Maxeiner.

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## MINNESOTA STATE MEDICAL ASSOCIATION

### DULUTH MEETING

"The best scientific program in the history of the organization is in preparation for the Sixty-second Annual Meeting of the Minnesota State Medical Association," President S. H. Boyer announced following the final meeting of the Committee on Scientific Assembly, March 22.

The meeting will be held in Duluth July 14, 15 and 16. A series of vitally important subjects will be discussed and a distinguished group of visiting celebrities will be present to make it a program no medical man can afford to miss.

It is expected that Dr. Volhartt of Germany and Dr. W. T. Longcope, professor of medicine, Johns Hopkins, will be present. They are scheduled to talk on diseases of the kidney.

The symposium on early carcinoma, one of the livest subjects before the medical profession today, will have W. J. Mayo, F. A. Figi and Waltman Walters of Rochester, and Leo Rigler and O. J. Campbell of Minneapolis to lead the discussion.

The symposia on Traumatic Surgery, Immunology, Rheumatic Fever and Anesthesia, scheduled also, will have equally distinguished attention.

The scientific aspect of the meeting will conclude with the symposium on Therapy led by such men as E. C. Davidson of Detroit on the "Treatment of Burns in Children," and R. S. Dixon, also of Detroit, on the "Treatment of Gonorrhea in the Female."

In response to a large number of requests the committee has arranged to present the Canti Cancer Film again as well as other new films of scientific interest.

Space does not permit full details of the important scientific program. But every member of the Association will look forward to the early publication of the complete printed program.

The first business session of the meeting is that of the Council scheduled for Sunday night, July 13, with the House of Delegates convening Monday. Medical fraternities and alumni associations of the University of Minnesota are planning meetings to coincide with this session.

Trends in modern medicine, where they are leading and what they hold in store for the regular practitioner will be discussed Monday night by Olin West, secretary of the American Medical Association; J. G. Crownhart, secretary of the Wisconsin State Medical Association; W. J. Burns, secretary of the Wayne County, Michigan, Medical Society; Paul Fesler, superintendent of the University Hospital; N. S. MacDonald, U. S. Veterans Bureau, and Mrs. F. L. Adair.

The banquet scheduled for Tuesday night will have W. A. O'Brien, University of Minnesota, for toastmaster. President Boyer announces that he hopes to have all living past presidents of the Association present at a special table for this occasion which is to be devoted to a good time for everybody with little, if any, speaking.

W. A. Coventry of Duluth, in charge of the local committees on arrangement, has appointed many subcommittees to look after the welfare of members and their wives. Arrangements for the Women's Auxiliary are in the hands of Mrs. F. W. Spicer and Mrs. B. F. Davis. Duluth members announce that they expect to make this the most delightful as well as the most interesting meeting in the history of the Association.

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## VITAMIN D IN TUBERCULOSIS

A recent investigation of the role of vitamin D in the management of tuberculosis indicated that the administration of viosterol did not produce any detectable acceleration of the healing process. These observations suggest that such value as cod liver oil possesses in tuberculosis does not depend on its relatively high concentration of vitamin D. These studies emphasize the fact that cod liver oil possesses more than one claim to nutritive value, for it is even richer in vitamin A than in the antirachitic factor. In spite of the enormous antirachitic potency of viosterol, this material is by no means to be regarded as therapeutically equivalent to cod liver oil. (Jour. A. M. A., February 8, 1930, p. 414.)

# A PAGE FORUM OF THE COMMITTEE ON PUBLIC HEALTH EDUCATION

## Medical Science in the Soviet

Available information on the state of socialized medicine in Russia shows a curious picture of a progressive idealism on the one hand and bitter class feeling on the other.

The apparent result is a large and ostensibly progressive organization for care of the sick resting upon an entirely inferior, unsuitably selected and badly educated medical profession.

Whether that is the inevitable result of socialized medicine or of the particular bitterness with which the professions are held in Soviet Russia, the reader is left to guess.

Dr. Ralph Reynolds, retired president of the American Medical Association in Vienna, visited a large number of clinics in Moscow and Leningrad recently.

He told the New York Herald-Tribune on his return that all Soviet workers are insured so as to provide medical care as well as full wages while they are sick.

Night sanatoriums for workers who are in poor physical condition in which the worker gets special diet and exercises and treatment if he needs them are flourishing. There are twenty-four of them in Moscow, ten for tuberculosis suspects. There are also 156 day nurseries, most of them located near the factories where the mothers are employed. Large numbers of physicians are on duty night and day at the public clinics. And there is ample provision and equipment for research.

On the other hand, all physicians are employed by the government and at a considerably lower wage than that paid the sovereign worker of the Soviet. This latter-day aristocrat will no longer hear of well paid professions which give the doctor or the lawyer a better home than he is able to earn.

Consequently even the best paid doctor seldom earns more than 100 dollars a month and is obliged to live accordingly, and a generally inferior class of students is entering the medical schools. In spite of the funds lavished by the government on equipment and instruments, scientific research inevitably leaves much to be desired, too.

The American doctor obviously looked with suspicion upon a system which manned even the most up-to-date and well equipped public health systems with inferior, badly educated and under-paid physicians.

An interview with the Grand Duke Alexander of Russia, published recently in the Illinois Medical Journal, affords another interesting, though possibly biased slant on the social state of things in Soviet Russia.

The grand duke's quarrel with the Soviet is not political, he insists. He is the present tenth in succession to the throne of the Romanoffs but declares that if by any strange hazard the ancient Romanoff power should be put in his hands, he would immediately deposit it in a Russian republic.

His quarrel is with the social teachings of that curious, half legendary revolutionary figure, Madame Kollontai.

"How many of you here in the United States know the truth or half the truth about the 'reforms of Russia'? Such reforms as teach little girls who should yet be learning their prayers that the sex act and its consequences need not worry them?

"What have we in Russia? Little girls, some of them as young as eight and ten years, openly having connections with men and knowing even at that age that the right of abortion is as free and easy as the right to drink water!"

This state of affairs he lays at the door of Kollontai and warns Americans of hidden germs of the same teachings in much of the proposed first aid to mothers and children legislation in the United States.

It is interesting to note that this exiled Russian of the ancient aristocracy has three sons employed in this country, one as a bond salesman in New York; another as a department store clerk in Chicago; a third engaged in aviation manufacture. The duke, himself, lectures occasionally, upon the romantic vicissitudes of his life.

# OF GENERAL INTEREST

Dr. Arthur Strachauer, Minneapolis, has resigned as Director of the Cancer Institute at the University. He retains his title as Professor of Surgery in the Medical School.

Miss Marion Vannier has resigned as Director of the School of Nursing at the University Medical School, effective September 1, 1930. Her successor has not yet been appointed.

Dr. Royal C. Gray of the University of Minnesota, Department of Mental and Nervous Diseases, left the latter part of March for Boston, where he will do post graduate work in the Boston Psychopathic Hospital.

Dr. Arthur Garbrecht, formerly associated with the Earl Clinic, Saint Paul, upon his return from post graduate study in Vienna in November, opened an office for general practice at 1035 Lowry Medical Arts Building.

Dr. Hugh Cabot, dean of the Medical School of the University of Michigan since 1921, will become Senior Consultant in Surgery at the Mayo Clinic, June first. Dr. Cabot was formerly professor of surgery at the Harvard Medical School.

Dr. Kano Ikeda took charge of the laboratories at the Charles T. Miller Hospital, Saint Paul, the first of the year, when he severed his connections with St. Luke's Hospital. He had been pathologist at St. Luke's Hospital for more than three years.

Dr. Harold Stratte, class of 1920, University of Minnesota, formerly of Hallock, Minnesota, has become associated with Dr. L. Sogge at Windom. Dr. Ellsworth Johnson of Windom begins a fellowship in radiology at the Mayo Clinic, April first. He formerly was associated with Dr. Sogge.

Dr. A. E. Flagstad, who until recently was assosociated with Drs. Chatterton and Von der Weyer, was recently appointed Deputy Coroner in Minneapolis. He maintains offices at 1549 Medical Arts Building, Minneapolis, and at 218 Lowry Medical Arts Building, in Saint Paul, for the practice of orthopedics.

Dr. Tressa Moran assumed charge of the laboratories at St. Luke's Hospital, Saint Paul, March first, coming to Saint Paul from Waterloo, Iowa. Dr. Moran received her medical degree at the Loyola Medical School, Chicago, and for a time was at the Mercy Hospital at Iowa City, and later pathologist and X-ray supervisor at the Allen Memorial Hospital, Waterloo, Iowa.

The fourth annual prize of $250.00 will be awarded this year by the Minnesota Society of Internal Medicine to the practicing Minnesota physician, not a member of the Society, who is deemed most worthy to receive a prize in research in clinical medicine. Inquiries and theses should be submitted to the Chairman of the Committee, Dr. E. T. F. Richards, Hamm Building, Saint Paul, before October 1, 1930.

The International Medical Club was formed in New York City a few years ago in order to promote contact between the graduates of foreign medical schools residing in this country and American medicine. Foreign language medical societies in New York City include a Spanish, German, Russian, Hungarian, Greek, Celtic and two Italian societies. Heretofore there has been no relationship between them. This item is published so that foreign medical graduates or American physicians interested may join the club. Dr. Richard Kovacs, 223 East 68th Street, New York City, is secretary.

## EFEDRON HART NASAL JELLY

EfeDronN Hart Nasal Jelly is another one of the ever increasing ephedrine proprietaries. The preparation is made by the Hart Drug Corporation, Miami, Florida. According to the label the formula is: Ephedrine hydrochloride Gr. 1; Chlorbutanol Gr. 2 1/4; Sodium Chloride Gr. 2 1/4; Menthol Gr. 3; Phenol Gr. 2; Oil of cinnamon Gr. 0.08; Jelly base q. s. ad drachms 5. The preparation has not been accepted for New and Nonofficial Remedies. While physicians' samples of this product have been liberally distributed, the carton is one which seemingly is addressed to the public as well. (Jour. A.M.A., February 8, 1930, p. 430.)

## ANTISTREPTOCOCCUS SERUM OMITTED FROM N.N.R.

The Council on Pharmacy and Chemistry reports that for some years it has been questioning the value of antistreptococcus serum preparations. In 1928 the Council decided that unless new and favorable evidence became available, all streptococcus serum preparations would be omitted from New and Nonofficial Remedies with the close of 1929. Since no such new evidence has become available, the Council has omitted all antistreptococcus serum preparations as follows: Antistreptococcic Serum (Gilliland Laboratories, Inc.); Antistreptococcic Serum, Polyvalent (Lederle Antitoxin Laboratories); Antistreptococcic Serum (Eli Lilly & Co.); Antistreptococcic Serum, Purified and Concentrated (Lilly); Antistreptococcic Serum, Polyvalent (H. K. Mulford Co.); Antistreptococcic Serum (National Drug Co.); Antistreptococcic Serum (Parke, Davis & Co.); Antistreptococcic Serum-Squibb. (Jour. A.M.A., February 15, 1930, p. 484.)

# CONSULTATION BUREAU

WM. A. O'BRIEN, M.D., *Director*
Minnesota State Medical Association
11 West Summit Avenue
Saint Paul, Minnesota

1. *Question.*—Please explain the technic used in convalescent serum prophylaxis for measles.

*Answer.*—Withdraw from 10 to 100 c.c. of blood, depending upon the condition of the donor, the fifth day the measles patient is afebrile. Centrifuge the blood, separate the serum from the clot, and keep the serum in an icebox. The serum is said to last up to two years, although this is doubtful. Citrated blood may be used if the blood is not to be kept too long.

If passive immunity is desired, make one injection of serum into the anterior thigh muscles five days after exposure. From seven to twelve c.c. are used, depending upon the age of the patient. If you wish to take advantage of the patient's own production of antibodies and run the risk of producing a mild or modified measles with more lasting immunity, the injection is made on the tenth day after exposure.

The indications are institutional practice, epidemic of virulent measles and protection of exposed children in a family which has come in contact with measles. This is often done when the exposed children are not well.

2. *Question.*—What is the most likely diagnosis and treatment for our patient who has the following history: Female, 54, married, came to us for examination because of severe backache and pain radiating down the right thigh to the knee with some weakness in the right lower extremity. Severe backache has been present for the past six or seven weeks and the pain in the thigh for about four weeks. She also complained of neuralgia in the right side of her neck, which extends from the ear down to the front of her neck. She had lost some weight but did not know how much. Mother died of cancer at seventy-five. Patient's gall-bladder was removed about seven years ago. Has had severe backache at intervals since then. Four years ago she was seen by a physician because of the bachache. An *x*-ray examination was reported as negative, and she was given a brace. She has had seven children, with no difficulty during pregnancy or delivery. Passed the climacteric three years ago. There has been no history of any pelvic disorder. When first seen, physical examination was negative except for definite tenderness along the right sciatic nerve from the hip to the knee. Hyperextension caused moderate pain, and there was also a definite tenderness of the right sacroiliac joint. She looked rather pale, and there was evidence of weight loss. Blood pressure 125/75. A tentative diagnosis of sciatic neuritis was made, and she was sent to the hospital for observation and treatment.

Since that time the pain has become more severe and is now bilateral. She has developed a prominence in the region of the eleventh and twelfth thoracic vertebræ. She had also developed a mass over the upper sternum, which has reached the size of a small orange. It is quite firm and apparently arises from the bone, as it is firmly fixed to it. Pelvic examination shows some tenderness under the abdominal wall in the midline. Laboratory: hemoglobin 84 per cent (Sahli), erythrocyte count 4,300,000, leukocyte count 3,900. Urine shows a few pus cells; red cells have never been present. X-ray examination shows a destructive lesion in the tenth thoracic, first, second, and third lumbar bodies, a mass in the mediastinum, and elevation of both sides of the diaphragm.

*Answer.*—Differential diagnosis is between Hodgkin's disease and metastatic carcinoma. Ewing's tumor (endothelioma) should also be considered as it involves bone, lymph nodes, and viscera. An absolute differential diagnosis can be made by excising the small piece of tissue from the sternal tumor. A search should also be made for a possible primary carcinoma. Sometimes a very small breast tumor will give metastases such as you have described. In any event, deep *x*-ray treatments should be given if the patient's condition justifies it. These treatments will probably relieve the pain and temporarily halt the progress of the disease, but the outcome will probably be lethal.

3. *Question.*—I have a patient, a seventeen year old boy, who hurt his knee two weeks ago while playing basketball. He states that he "did not come down right on the knee." Pain following the injury was only slight and the swelling not very great. He has been unable to completely extend the leg, and up to the present time has shown no improvement. *X*-ray plates show a partial separation of the spine of the tibia. Will you please advise me as to the diagnosis and treatment of this condition, as I have been unable to find anything about it in my textbooks.

*Answer.*—The most probable diagnosis is a shearing injury of the spines of the tibia. A search should be made for previous disease or injury in the bone. Tuberculosis is also another possibility, but it probably can be ruled out from your history and description of the lesion. Another possibility should be considered; that is, that the lesion is an old one and that the recent injury either aggravated it or brought it to the attention of the patient. Laceration of the crucial ligaments usually accompanies this form of trauma. An attempt should be made to find out if there is any displacement of the tibia. Grasp the leg above and below the knee and try to elicit displacement. Forward displacement will probably indicate that the posterior ligament is involved while posterior displacement usually points to involvement of the anterior ligament. Please let us know if displacement is present, and we will advise you as to the future treatment. If no displacement is present, conservative treatment will probably be all that is needed.

# PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of February 19, 1930

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, February 19, 1930, having been postponed one week on account of the meeting of the American College of Physicians. Dinner was served at 7 p. m. and the meeting was called to order at 8 p. m. by the President, Dr. Emil S. Geist. There were 38 members and 1 visitor present.

Minutes of the January meeting were read and approved. A Committee consisting of Drs. Freeman, Foley, and S. E. Sweitzer was appointed by the President to draw up a memorial of Dr. Paul B. Cook.

The scientific program of the evening consisted of two theses and a case report, as follows:

Dr. Albert G. Schulze, St. Paul, read his thesis entitled "A Plea for the Radical Treatment of Incomplete Abortion."

DISCUSSION

Dr. John F. Noble (St. Paul) (by invitation): The curettings from the cases which Dr. Schulze has described were sent to the Ancker Hospital Laboratory for examination. They were described grossly and microscopically and this decription was filed with the charts. The data which he has cited was taken from these reports. No clinical histories were available with the specimens so that, in the few cases where a diagnosis of acute or chronic endometritis was made, only endometrium was found in the specimens and this endometrium contained acute or chronic inflammatory cells with no products of conception present to confirm the clinical diagnosis of incomplete abortion.

I do not believe that the division of these cases into two groups, clean and infected, on the basis of the presence or absence of inflammatory cells is sound. The very nature of incomplete abortion makes the presence of necrotic tissue a common finding and the necrotic material sets up an inflammatory reaction in the uterus which cannot be separated microscopically from bacterial inflammation, and in those instances where large amounts of material were removed from the uterus, only small blocks of tissue were examined and other areas might have shown leukocytes. I think my reports have misled Dr. Schulze in this matter.

Practically the only method by which a pathologist can judge the value of a therapeutic measure of this type is by the mortality rate. The fact that Dr. Schulze has treated 235 consecutive cases without a death speaks for itself. When I went to the Ancker Hospital about five years ago and these specimens began to appear in the laboratory, I fully expected to be called upon to autopsy some of them, but as time went on and no deaths occurred, I came to the conclusion that at least in his hands it was a satisfactory method of treatment.

From a pathological standpoint, there are two things to consider when a curettage of an incomplete abortion is contemplated. In the first place a curette is bound to break down the natural defensive reaction in the uterine wall against infection, and to open up channels for infection, but in thoroughly removing necrotic tissue which is an excellent culture media, the danger of infection is reduced. This is undoubtedly desirable. The question then is simply: What is the least harmful method of removing placental and decidual remnants from the uterus?

I would like to ask Dr. Schulze whether or not any of these cases were criminal abortions.

Dr. J. L. Rothrock (St. Paul): I was very much interested in Dr. Schulze's paper, especially his plan of treatment.

I had hoped he would say something about abortion in the various stages of pregnancy up to four months. It seems he evidently has dealt principally with abortions of early pregnancy. We are liable to fall into error in attempting to apply a stereotyped plan of treatment to all cases, and here, as elsewhere, I believe it a safer plan to meet indications existing.

I, too, have had a considerable experience in the treatment of incomplete abortions. Formerly, two or more decades ago, it was the almost universal practice decided that the abortion was inevitable. In applying this plan indiscriminately to all manner of cases, unpleasant consequences sometimes followed, especially in infected cases, and it is not always possible to tell in advance whether infection is present or not. For that reason I have long since adopted more conservative measures. My plan of treatment was usually this: If the abortion seemed inevitable, and the cervix was undilated, and if considerable hemorrhage was taking place, a gauze pack was firmly placed in the vaginal vault around the cervix and the patient was then given quinin or ergot and, in many instances, within 8 to 12 hours on removal of the pack, the contents of the uterus would be expelled or be protruding from the dilated cervix and could easily be removed with a forceps without invading the uterine cavity. If not, the cervix would be found sufficiently dilated to admit a finger and the uterine cavity could be explored and any adherent or retained membranes could easily be removed, often without any anesthetic. Other cases, which, on account of hemorrhage, demanded prompt relief, were of course curetted.

I think the objections and difficulties, mentioned by Dr. Schulze, to digital removal of retained portions of placenta and membranes are theoretical and in my experience have not been met. My experience in this respect has been identical with Dr. Williams', so admirably expressed in his textbook.

One of the surprising things in early abortion is the comparative freedom from fatality on account of hemorrhage; I have never known a case of fatal hemorrhage in an early abortion, and Hofmeier quotes Alfred Hegar as stating that in more than 40 years' experience he could recall no case that died from hemorrhage following abortion in early pregnancy. In the recommendation of the curette, its dangers must not be lost sight of. If the uterus is soft, it is easily perforated, perhaps without much risk to the patient, but

still a potential risk. A too thorough curettage of the recently pregnant uterus may remove so much of the endometrium that scars are left and if the patient becomes pregnant again there may be an adherent placenta.

Furthermore, the curette is not so certain a method of removing all of the placental tissue. To be convinced of this one has only to make a digital examination following a curettage to note how much placental tissue has been left behind. Another disadvantage of curettage is that the curette stimulates the normal rhythmic contraction of the uterus to an exaggerated degree and my experience has been the loss of much more blood during curettage than where the placenta is removed with the finger.

The general consensus of opinion is that the curette may be dangerous in infected cases, causing a rapid extension by opening up new avenues favoring extension.

The highly favorable outcome in this series is undoubtedly due in a large measure to Dr. Schulze's skill in the use of the curette, but the thought occurs to me that in this series he was dealing almost entirely with uninfected cases, or at least not with hemolytic streptococcus infections.

Dr. Arnold Schwyzer (St. Paul): Dr. Schulze has had excellent results. However, he made the statement at the end of the paper that the use of a sharp curette is a safe procedure. I don't think that it is right to make such a broad statement to be followed by every practitioner. I will refer to one case I saw when still an assistant in the Women's Hospital of Zurich. The chief assistant was curetting a woman and I was assisting him. He got out a lot of material, a lot of white bands, and it seemed queer that so much material could come out. I then remarked to him, "This is muscle." He had scraped out much of the uterine muscular tissue. She had fierce bleeding and was packed. When the packing was removed in about two days, the bleeding started again and we had to pack again, and after this a third time. Then the case seemed all right. But what happened later on I do not know. So, if one says that a sharp curette is a safe thing, this is stating too much. In skilled hands like Dr. Schulze's he has shown that it is all right; but to give that out as holding good for every doctor, is a dangerous thing. Furthermore, I don't think it is often necessary to insert the whole hand into the vagina to palpate the uterine cavity with one finger as Dr. Schulze stated. A sharp curette, especially in the later months, can do a great deal of damage. You do not need to get every shred at once; small particles will come away with the packing.

I would like to say here that a good number of years ago Professor Chlumsky published a paper in which he told of the value of a phenol-camphor mixture. When carbolic acid crystals and camphor crystals are put together they melt into a clear fluid. He used 30 per cent of carbolic acid and 60 per cent camphor, and the rest alcohol to make up 100. This is an exceedingly strong, non-cauterizing, antiseptic solution, and we moisten the gauze with this. You can leave it in for three days and it comes out still smelling sweet.

To return to the objection I raised: With a sharp instrument you might curette out the muscular coat; if not careful this possibility should be reckoned with. If we never had heard of this danger and did not watch what we scrape out, we would be liable to do much damage even if we do not perforate the uterus.

Dr. H. B. Sweetser (Minneapolis): While listening to Dr. Schulze's paper, I said to myself, "In the hands of an expert, like Dr. Schulze, possibly it is safe to use a sharp curette, but in the hands of the general practitioner, to whom many of these cases come, both in hospitals and in homes, I feel sure that such a procedure will result in disaster if not a few cases."

Twice, in my experience, I have had to resect coils of bowel which were pulled down through a perforation of the uterus under the mistaken impression that they were secundines. The wall of the pregnant or recently pregnant uterus is very soft and relaxed, and it requires a very educated tactile sensibility, especially when applied through a sharp curette, to determine that the curette is gliding along the wall and not through it. Therefore, I think it would be a dangerous thing to send out a report of this kind, showing such good results in the hands of an expert.

Dr. H. T. Nippert (St. Paul): When I started out as a country practitioner in St. Paul about 37 years ago when you could not get a patient to a hospital, I had more abortions than confinements the first few years. I used to go in, but not with a sharp curette. I used a dull curette and would clean out as much as I could and then went in with the finger and frequently had to go in again as I found after digital examination there were still some pieces of placental tissue or membranes left. A great many I emptied with only the index finger. One case especially comes to my mind. I had put the patient across the bed and soaked a few towels in bichloride of mercury solution and put over her abdomen and thighs. When I was curetting her the curette suddenly went in up to the handle and I said "that has gone through the uterus." On each visit afterwards I was afraid something would show up but nothing did. I feel like Dr. Schwyzer, if a woman is pregnant three or four months, I would wait and see what happened but if early in pregnancy I would go in with a dull curette. I have never seen any mishap nor had any bad results from it. Now things are done much more simply and antiseptically in the hospital. Even in private homes I would do it with the dull curette and think we would get along just as well.

Dr. R. T. LaVake (Minneapolis): The importance of this subject demands a full and free discussion. My experience leads me to practice and advocate the conservative treatment of incomplete abortions. A survey of literature leads me to believe that it is the opinion of the great majority that the conservative treatment is the treatment of choice.

Dr. Schulze has outlined in his interesting paper his reasons for having changed from his advocacy of conservative treatment to his advocacy of radical treatment with the sharp curette. It is instructive, but quite

disturbing to any positive attitude of assurance on any subject, to contemplate the widely different conclusions that can be drawn from the same cold facts and figures. To my mind, the facts and figures in Dr. Schulze's stimulating paper show what can be done with a sharp curette and not what should be done or advocated.

Conservative treatment of this condition implies non-interference except upon the indication of profound or protracted bleeding, or for the possible drainage of pus collections. In private practice most abortions are not induced and in these cases my experience convinces me that 9 out of 10 are so complete that routine intervention of any kind may be classed as meddlesome and unnecessary. In a general hospital a greater percentage of abortions prove to have been induced and a greater percentage will need interferenc at some period in their treatment. This is a point that I did not hear mentioned in this paper.

When profuse or extended bleeding points to the possible advisability of interference, to my mind each abortion should be considered as potentially infected until one can be reasonably sure that it is not, by the temperature, leukocyte and differential counts and, possibly, by the sedimentation test if doubt still prevails. Temperature alone, as a criterion of safety, is not sufficient. If it is an infected case, one can visualize the infected area as surrounded by a protective leukocytic barrier that must not be broken down, if avoidable, by any form of intervention. In any case, when intervention is definitely indicated, I deem the finger to be the safest instrument. If the finger proves to be inadequate, the next safest instrument is the largest dull curette that can be inserted. Even this should be used with the greatest caution. The larger the curette, the less likely is the danger of perforation. Although many of us have been lucky enough not to have perforated a uterus with a curette, most of see at least one perforation a year, and our turn is to be expected. Very few men of large experience have not perforated a uterus.

In my opinion the sharp curette should be used mostly as a diagnostic instrument, and should be used as a curative agent only when infection has been as nearly definitely excluded as possible and when the condition is found to be other than an incomplete abortion. Even then the sharp curette is not without danger, as I have learned from bitter experience in cases where, under the best conditions of surroundings, supervision and technic, the most alarming results of infection have followed a simple diagnostic curettage.

From the standpoint of relative safety, the number of days one should wait before intervention after the temperature, leukocyte count and sedimentation test have been normal, no one so far as I know can state with any degree of assurance. Personally I would rather have an interval of over a week than under a week, if the scant loss of blood warrants the delay.

Dr. Frank Wright (Minneapolis): I would like to ask how a man is to become expert in the use of the sharp curette if he does not begin to use it until he is expert.

Dr. C. M. Carlaw (Minneapolis): Why use the curette at all? In the early 90's at the old Asbury Hospital I curetted one of these cases with a sharp curette and the first think I knew I was tickling the umbilicus. I became very much alarmed and when I saw Dr. Dunsmoor in the hall outside of the operating room I told him what I had done. He said that so long as I did not pull down a loop of intestine it was all right. That case did teach me not to use the sharp curette. I think in most cases that need curetting, completing the dilatation with a Goodell dilator and working with a sponge holder you can with safety empty the uterus and then instead of the curette, roll gauze around a uterine forcep and with this, curette the inside of the uterus by rotating it around in a corkscrew action. You will be surprised how easily and thoroughly you can polish the inside of the uterus with this sponge curette. Follow this cleaning by swabbing out the uterine cavity with Skene's solution of iodin and then clean up the parts with alcohol. You will find the bleeding will stop, the uterus will contract, the temperature will drop and the patient will rapidly get well.

Dr. J. F. Hammond (St. Paul): I think the discussion about the curette can be applied to any instrument. The scalpel is a very dangerous instrument if not used properly. I think the curette can be put in the same class. In the majority of cases, particularly in abortions before the third month, the simplest way to empty the uterus is with the curette. I quite agree with what the speaker has said about infection. I was brought up on the radical treatment, if you wish to call it that, and in the maternity hospital where I was in 1906-07 our attempt was to empty every uterus as quickly as possible. At that time Williams was preaching the use of the finger. If one or two fingers could not be inserted through the cervix we were told to incise the cervix, but that always seemed to me to be a radical procedure. As a matter of fact we never carried that out. The difficulty I had with the use of the finger was that I could not be sure that I was removing everything. So I think in early abortion, where you have decided there are no contra-indications and no infection going on, the uterus can be emptied in a conservative way by using the curette. I don't think one need use a sharp curette. It is very easy to put any curette through the uterus. Dr. Nippert's remarks remind me of Dr. Chipman, who always impressed on the students the necessity of care in the use of the curette. He once asked one of the students what he would do if the curette went through the uterus. The student said he would pull it back.

Dr. LaVake said that, if you wait, 9 out of 10 will not need any interference. That is true, but they will have a very long convalescence. After the first 3 or 4 months I think the simplest way to do is to pack the cervix and allow the uterus to expel the contents. As Dr. Rothrock has said, you will likely find the ovum in the vagina in 48 hours. In infected cases I think it is well to wait until the temperature is normal. There is another class of cases where it is urgently necessary to interfere—where the patient is bleeding and infected.

I have had two cases where that condition existed. They were losing a lot of blood and were definitely infected. The question arose as to what would be conservative treatment. In those two cases I felt that the safer way would be to do a hysterectomy and I did it. That can be condemned too and it has been done, but those two cases recovered. One has to be up against a case before he can decide just what to do. I think Dr. Schulze's management of these cases has been very good. I had previously thought he followed or advocated never touching the uterus in these cases but I see he does not believe in allowing his cases to go on indefinitely.

DR. SCHULZE (in closing): I do not wish to create the impression that I curette everything. All of this work was done in my service at the Ancker Hospital where we are obliged to take whatever comes.

There are three groups of cases where we follow a waiting policy. The first group include those women generally three months pregnant or more who very likely have had a complete miscarriage instead of incomplete. We give them the benefit of the doubt and our further treatment is dependent on their clinical course. The second group include those women who are running a temperature. Here we are obliged to wait, as such a patient is not a good surgical risk. The third group include those women who, although they have no temperature, have been criminally aborted. These women are potentially infected. It is always permissible to remove plugs of placental tissue from the cervix.

Dr. Noble asked if any of these were cases of criminal abortions. To this I would reply that my estimate would be that about one-third of them are.

Dr. Rothrock inquired about the stage of pregnancy. The majority of these cases were in the first trimester. We had one case which proved fatal from the anemia following the tremendous loss of blood, but this case was not curetted.

Dr. LaVake stated the facts very aptly when he said that each man follows the method which he likes best and my preference in the matter is set forth in my paper. It is difficult to state who has become skilled in curetting a uterus, but any one who undertakes it should be careful. Dr. LaVake's choice is one of noninterference because he feels that by waiting his patients will not require interference; but other factors must be considered. How long do these patients bleed? How much do they bleed? How long are they in the hospital? Are you not exposing these patients to possible infection? I am guided by my results, which I feel have been very good.

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DR. MARTIN NORDLAND (Minneapolis) read his thesis entitled "The Larynx as Related to Surgery of the Thyroid, Based on an Anatomical Study." Numerous lantern slides were shown.

DISCUSSION

DR. GUSTAV SCHWYZER (Minneapolis): Even if a surgeon doing thyroidectomies cannot regard all the finer ramifications of the nerves, nevertheless it is very important and imperative that he knows the exact course of the nerves in his field of operation.

Dr. Nordland has shown us a number of beautiful pictures reproducing anatomical dissections he has done recently at the University of Minnesota. His work concerns in particular the superior and inferior (recurrent) laryngeal nerves. Both are cervical branches of the vagus. The vagus itself coming from the brain through the foramen jugulare forms a thickening shortly after leaving the skull and this is called the ganglion nodosum. This ganglion receives motoric fibers from the 11th and 12th cerebral nerves, the accessorius and the hypoglossus. Thus we have in this ganglion sensory and motoric fibres. That the superior laryngeal nerve in its external branch carries motoric fibers has been known to us for a long time. We know that the cricothyroid muscle, a muscle which is destined to tense the vocal cords, and the pharyngeal inferior constrictor muscle are innervated by the external branch of the superior laryngeal nerve. The pharyngeal muscles are playing an important part in the phonation.

The very special points that Dr. Nordland brings out concern the internal ramus of the superior laryngeal nerve. In a beautiful specimen of a resected larynx he shows us that a number of branches of this internal ramus of the superior laryngeal nerve goes into the interarytenoid muscle. This work corroborates the work of others.

For years we have practiced a method of ligating the entire upper horn instead of only the blood vessel running into the same. This procedure undoubtedly safeguards the superior laryngeal nerve and avoids paralysis of the cricothyroid muscle. In spite of this method, however, I remember we had cases of temporary hoarseness, the phenomenon explained here tonight. The condition just brought to our attention should not be confused with a paralysis of the vocal cords by injury to the recurrent nerve.

DeQuervain's method of ligating the inferior thyroid artery is of decided advantage. It ligates this artery at its trunk and not only one of its branches. It causes remarkable hemostasis which is striking in bleeding toxic goiters, and finally it means the safety of the recurrent laryngeal nerve, because the ligation takes place quite a bit farther out at the point where the inferior thyroid artery comes and makes a curve from beneath the common carotid.

In cases of recurring goiter, particularly in toxic goiter where we have to operate again, it is my belief that the method of ligating the inferior artery as mentioned above is liable to bring on injury to the recurrent laryngeal nerve because of the distorted anatomy. For this reason I do not consider this procedure a very safe method when operating on recurring goiter cases.

I wish to thank Dr. Nordland in the name of Academy for his interesting pictures of the anatomical dissections he has shown us tonight.

DR. A. E. BENJAMIN (Minneapolis): I am pleased to have seen this presentation. It gives us a more vivid idea of the arterial, venous and nerve supply of the thyroid area. A number of years ago I did some dissecting in this region to determine what was the best

procedure in thyroid surgery, and after witnessing operations in various parts of the United States and Europe, I decided that thyroid surgery had been made too difficult and with too much effort on the part of the operator. I then began more or less mass control by using the clamp, endeavoring to clamp the blood vessels and capsule of the upper pole and the gland tissue below, including the branches of the inferior thyroid. I then found that thyroid surgery was very easy in the majority of cases because the hemostasis was almost perfect. I always use plain catgut. I had no trouble, no hoarseness resulting, and so far have not included any nerve structure, although that may have been good luck. At any rate, this plan has obviated any of the unfortunate results in the work. I found it unnecessary to ligate every branch but dissected out the diseased portions of the lobes, then passed the sutures back and forth through the capsule and any of the gland that was left. In this way I then had a pretty clean field all the time. It has been very satisfactory. I have not yet had the boldness in many cases to ligate the artery beyond the fascia, thinking perhaps it might be that, if I disturbed the blood supply of the remaining gland tissue too much, I might have some unfortunate results.

DR. H. A. H. BOUMAN (Minneapolis): I rise to say that I have listened to Dr. Nordland's thesis not only with profit but with great pleasure and a feeling of gratitude, having known him when he was a very young man in our section of the city.

Some microscopical studies have also been made of late to determine the nature of these nerves. The vagus is not a compact cable, but is composed of numerous bundles held loosely together by connective tissue. On cross section in the neck region various kinds of fibers are seen. Some have heavy, some delicate medullary sheaths and fewer are bare axis cylinders. The laryngei carry by far the most fibers with heavy sheaths; indeed, the recurres seems to be made up almost entirely of these fibers, which are motor.

Regarding the ligature of the inferior thyroid, Kocher taught to tie this vessel at exactly the same place, but he did not separate the muscles to reach it before exposing the goiter, as Dr. Nordland has practiced.

DR. NORDLAND (in closing): I want to thank the gentlemen for their discussion of my paper. I have nothing of importance to add. I did not intend to discuss the various advantages of the ligature of the inferior thyroid artery, according to deQuervain. The point I want to stress is that it is occasionally necessary to ligate this vessel, and, when it is, I believe the anatomical factors indicate that it is an advantage to ligate it according to this method.

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DR. A. R. HALL (St. Paul) gave a report of "Abnormal Subclavian Arteries" and showed *x*-ray films. (To be reported later.)

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The meeting adjourned.

R. T. LAVAKE, M.D.,
*Secretary.*

# NEW AND NON-OFFICIAL REMEDIES

The following article has been accepted by the Council on Pharmacy and Chemistry.

UNITED STATES STANDARD PRODUCTS CO.

Diphtheria Toxin-Antitoxin Mixture 0.1 L+ (Non-Sensitizing) Prepared from Sheep Serum.

The following articles have been exampted and included with the List of Exempted Medicinal Articles (New and Non-official Remedies, 1929, p. 481):

ROBERT MCNEIL

Tincture Digitalis Duo-Test McNeil
Black Capsules Digitalis Duo-Test McNeil

## TRUTH ABOUT MEDICINES

*Meads Viosterol In Oil 100 D.*—A brand of viosterol in oil 100 D, N.N.R. (Jour. A. M. A., August 31, 1929, p. 693). Mead Johnson & Co., Evansville, Ind.

*Lenigallol-Zinc Ointment.* — It contains lenigallol (Jour. A. M. A., April 6, 1929, p. 1181) 6 per cent in a base composed of zinc oxide ointment-U.S.P. E. Bilhuber, Inc., New York.

*Typho-Serobacterin-Mulford (Sensitized Typhoid Vaccine) (New and Non-official Remedies, 1929, p. 384).*—This product is also marketed in packages of three syringes, being three immunizing doses. H. K. Mulford Co., Philadelphia. (Jour. A. M. A., February 1, 1930, p. 339).

## FOODS

The following products have been accepted as conforming to the rules of the Committee on Foods of the Council on Pharmacy and Chemistry of the American Medical Association. These products are approved for advertising in the publications of the American Medical Association, and for general promulgation to the public.

*Junket (The Junket Folks, Chr. Hansen's Laboratory, Inc., Little Falls, N. Y.).*—To prepare the product the dried blown or dried salted rennets in ordinary salt brine is extracted. The enzyme is then precipitated by salting the saturation and the resulting precipitate is mixed with pure Worcester salt, dried and pressed into tablets. Flavored Junket consists of rennet powder, similar to that used for Junket Tablets, except that this is mixed with cane sugar and natural flavoring. While the rennin enzyme itself does not add to the fuel value of milk, it makes it more wholesome because of its digestive action on the milk.

*Spintrate (Spinach Concentrate) (Spinach Products Co., Inc., Norfolk, Va.).*—Spinach in the form of a fine powder made from fresh spinach of the Savoy or curly leaf type. Spintrate is an excellent source of food iron, calcium, and phosphorus; it is also a rich source of vitamin A, B ($B_1$) and G ($B_2$).

*Whitefield Genuine Grapefruit Juice (Whitefield Citrus Corporation, Long Island City, N. Y.).*—This is pure undiluted juice of sun-ripened grapefruit and contains no added preservatives. The process of manufacture preserves the original character of the juice.

*Whitefield Genuine Orange Butter (Whitefield Citrus*

*Corporation, Long Island City, N. Y.).*—This is an orange preserve with a new and different flavor and consistency made from tree-ripened fruit.

*Aunt Jemima Pancake Flour (The Quaker Oats Co., Chicago).*—The product is a mixture of four flours—wheat, corn, rye, rice—with sugar, milk, baking powder and salt.

*Aunt Jemima Buckwheat, Corn and Wheat Flour (The Quaker Oats Co., Chicago).*—This is a buckwheat corn and wheat flour.

*Quaker Crackels (The Quaker Oats Co., Chicago).*—This is composed of corn, wheat and oats.

*Quaker Quick Macaroni (The Quaker Oats Co., Chicago).*—This is a new-type macaroni. A milk containing macaroni that cooks in five minutes instead of twenty. (Jour. A. M. A., February 8, 1930, p. 411).

*Bordens Evaporated Milk (The Borden Co., New York City).*—It has the following average composition: fat, 7.85%; protein, 6.88%; carbohydrates, 9.67%; ash, 1.55%; total solids, 25.95%; water, 74.05%. The product is manufactured from whole milk. Borden's Evaporated Milk is advertised for infant feeding and for household use in making milk convenient for cooking. It is claimed that the milk is clean and sterile; that it resembles breast milk in ease of digestion; and that it produces fine flocculent curds.

*Cream of Wheat (Cream of Wheat Co., Minneapolis).*—It is a product made entirely from wheat. It consists of the endosperm of the wheat, with only so much of the bran and germ as it is impossible to remove. The product is used because it is rich in energy content and easily digested.

*Gerber's Strained Vegetable Products (Gerber Products Division, Fremont Canning Co., Fremont, Mich.).*—Brands: Gerber's Strained Spinach, Strained Carrots, Strained Green Beans, Strained Peas, Strained Prunes, Strained Tomatoes and Strained Vegetable Soup. Specially selected vegetables, steam pressure cooked and sterilized at high temperature. It is claimed that by excluding air and cooking under steam pressure without water, a greater conservation of mineral salts and vitamin elements is effected.

*The New Pettijohn's (The Quaker Oats Co., Chicago).*—This product consists of the whole wheat grain. It is obtained by steaming and flaking wheat which has a tender bran, the bran being included in unground form. The product contains all the nutritive elements of whole wheat.

*Post's Bran Flakes with other parts of Wheat (Postum Co., Inc., Battle Creek, Mich.).*—The product is composed of bran flakes with other parts of wheat, flavored with malt syrup and salt. It combines the advantages of wheat bran in a nourishing and appetizing food. (Jour. A. M. A., February 15, 1930, p. 485.)

*Muffets (Irradiated) (The Quaker Oats Co., Chicago).*—Whole wheat, cooked, crushed, drawn out to filmy ribbon of wheaten threads. Wound round and round, baked and toasted. Muffets (Irradiated) makes vitamin D available in a breakfast food for all ages except infants. It is not intended as a therapeutic agent to supplant cod liver oil.

*Quaker Farina (Irradiated) (The Quaker Oats Co., Chicago).*—Farina passed under the rays of ultraviolet lamps until it acquires vitamin D. The product will improve calcium and phosphorus retention. It holds its irradiation under extreme conditions of cooking and storing.

*Quaker Puffed Rice (The Quaker Oats Co., Chicago).*—This product consists of rice kernels puffed to eight times normal size, providing for easy assimilation and retaining important food elements.

*Quaker Milk Spaghetti (The Quaker Oats Co., Chicago).*—The product is made from whole milk and wheat. (Jour. A. M. A., February 22, 1930, p. 559).

# PROGRESS

**Abstracts to be submitted to Section Supervisors.**

**Members are urged to abstract valuable articles which they run across in their reading and send the abstracts to the physicians in charge of the respective sections. In order to avoid duplication it would be well to communicate with one of the section supervisors before the article is abstracted.**

# MEDICINE

**SUPERVISORS:**

F. J. HIRSCHBOECK,
**205 W. 2nd STREET, DULUTH**

THOMAS A. PEPPARD,
**LA SALLE BLDG., MINNEAPOLIS**

TUBERCULOSIS IN PUBLIC SCHOOL CHILDREN: Opie, H. R. Landis, McPhedran and Hetherington (Amer. Rev. of Tuberc., 1929, XX, 413). Sanatorium treatment gives children with manifest tuberculosis the best chance for recovery.

A certain number of children acquire serious tuberculous infection unaccompanied by physical signs or symptoms which, unless checked, will become clinical tuberculosis.

In the present study an attempt is made to apply the knowledge of latent tuberculosis that has been acquired by investigation of the spread of tuberculosis in families to the recognition and control of tuberculosis in schools.

About 800 white pupils and about 800 colored pupils in Philadelphia schools were studied.

To detect advanced latent tuberculosis, the tuberculin reaction and *x*-ray examinations were found useful. A history of contact with tuberculosis was often difficult to obtain.

The following are some of the types of advanced

latent tuberculous infection found: 1. Tuberculosis of tracheobronchial lymph nodes. 2. Tuberculous infiltration of the lung, of the childhood type. 3. Apical lesions of the adult type occurring in children, 12 to 18 years of age. The tuberculin test performed on 4,000 children showed that tuberculous infection is now scarcely less frequent in Philadelphia than in the cities of Europe 20 years ago.

Severe infiltrating lesions were remarkably prevalent in adolescent girls.

Manifest disease was found four times as often in adolescent colored children as in white children of the same age.

Prophylactic care controlled by repeated physical and roentgenological examinations furnishes a means by which advanced latent infection may be arrested before it has developed into clinically manifest disease. Children with the following conditions should receive special care in nutrition-tuberculosis classes or by some other regimen adapted to their needs, and they are suitable for admission to a preventorium if it is available:

(1) Manifest pulmonary tuberculosis with no symptoms, physical signs or roentgenological evidence indicating that the lesion is active. Sputum, if present, must be demonstrated to be free from tubercle bacilli.

(2) Latent apical tuberculosis.

(3) Latent tuberculous infiltration of the lung often associated with tuberculosis of tracheobronchial lymph nodes. In some instances, particularly in older children, these lesions are the scars of preëxisting infection.

(4) Tuberculosis of tracheobronchial lymph nodes, even though partly calcified (a) when the child is still in contact with open tuberculosis; (b) when the reaction to tuberculin is unusually intense; (c) when the lesions are unusually large or very numerous; (d) when they are associated with evidence of impaired health perhaps not referable to tuberculosis and including advanced underweight.

The study of the contagion of tuberculosis in families exposed to open tuberculosis has shown that children with the lesions just described are liable to develop manifest disease, but it is not assumed that the foregoing groups include all of the children who will develop manifest tuberculosis.

The following types of tuberculous infection are widely prevalent among healthy children and do not require special care:

(1) Infection demonstrated by a positive tuberculin reaction without lesion demonstrable by roentgenological examination even though there is contact with open tuberculosis. (Repeated examination are, however, essential for all children in contact with open tuberculosis.)

(2) Circumscribed nodules in the lung substance that have undergone calcification.

(3) Roentgenologically demonstrable tuberculosis of tracheobronchial lymph nodes that are partly calcified, except under the conditions outlined above. Sharply defined, very opaque lesions are likely to be healed or healing.

A. T. Laird, M.D.

# SURGERY

SUPERVISORS:
DONALD K. BACON,
LOWRY BLDG., ST. PAUL
VERNE C. HUNT,
MAYO CLINIC, ROCHESTER

PRIMARY CARCINOMA OF THE URETER—REPORT OF A CASE AND A REVIEW OF THE LITERATURE: Louis M. Rousselot and John Daniel Lamon (Surg., Gynec. and Obstet., Vol. L., Jan., 1930, No. 1, 17-28). Rayer is given credit for having described the first case of this rare disease in 1841. Blatt collected forty cases from the literature in 1926. The authors review forty-eight cases collected from the literature and add a case report of their own, bringing the total up to forty-nine.

Men and women are afflicted in the same proportion. Sixty per cent of the cases occur in individuals over fifty years of age.

The outstanding symptoms are quite severe pain and hematuria; either of which occurred in all cases, and both of which occurred in over half of the cases. Other symptoms of urinary tract infection and irritation, and the sensation of a mass are much less common.

The direct diagnosis is suggested by the history of pain and hematuria and the presence of ureteral obstruction on ureteral catheterization with the *x*-ray films negative for stones in the urinary tract. A correct diagnosis was made or entertained in fourteen of the forty-nine cases. The differential diagnosis must exclude tumor of the kidney and renal stone.

The lesion is most often a papillary carcinoma. The non-papillary group include the squamous cell group, which probably arise from a metaplasia of the renal pelvis and ureter. The irritative action of stones has been involved by some as a factor in the metaplasia of the transitional epithelium of the kidney pelvis and ureter to a squamous cell type on the one hand, and as predisposing to carcinoma on the other hand. In only six cases were calculi present in the urinary tract. One of the outstanding sequelæ of prolonged ureteral obstruction is a hydronephrosis.

The prognosis is very grave; thirty patients dying while under treatment or within a few months. Among the remaining nineteen cases, one patient was well two and one-half years, and two other patients were symptom-free after one year.

The treatment of choice is uretero-nephrectomy.

Case report: A negro housewife of forty-eight years complained of constant pain in the left flank and left costo-vertebral angle, present for six weeks. She had also experienced night sweats, vomiting, distressing nocturia, and an increase in size of the abdomen. Examination revealed a feeble negress with a temperature of 101.2 and a pulse of 112. A large, hard, immovable tender mass was felt in the left upper quadrant. On

pelvic examination a large, smooth, round mass was palpated in the cul-de-sac, and which on cystoscopic examination was found to elevate the base of the bladder. *X*-ray examination of the abdomen was suggestive for stone shadows in the left kidney. The phenolsulphonephthalein output was five per cent in two hours. The blood urea was .81 mg. per litre of blood. The blood count revealed a moderate secondary anemia with a leukocytosis of 29,000. The urine contained a trace of albumin and pus cells. The patient died thirty-one days after the evacuation of the contents of a pelvic dermoid, running a progressively downhill course with a temperature of 99-101° F. At autopsy a benign dermoid surrounded by firm adhesions was found in the pelvis. A diffuse adenomyomatosis was present in the left tube. The left ureter was dilated to 0.5 cm. and contained small irregular elevated patches of tumor tissue in the upper 5.5 cm. of ureter. The midportion of the ureter presented a ureteritis cystica. The left kidney, enlarged to 17 x 13 x 10 cm., was composed of a multiloculated pyonephrotic sac containing two stones. The right ureter was dilated to 2.0 cm. and presented a ureteritis cystica and contained a large pointed stone completely occluding the ureter near the ureterovesical junction. The right kidney measured 16 x 10 x 9 cm. and its calyces and pelvis were extremely dilated. The tumor had invaded the left kidney and adjacent nerves; and metastases were present in the regional, perigastric and bronchial lymph nodes, adrenals, pancreas, liver, lungs and pleuræ. The tumor cells were of the squamous cell type with areas of prickle cells arranged in rounded islands or forming long finger-like processes dipping into the subjacent muscularis. The metastases resembled the parent tumor.

J. H. Rieniets, M.D.

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TEMPORARY DIVERSION OF THE URINE BY PYELOSTOMY IN REPAIR OF THE URETER: Marc Iselin, Paris, France (Surg., Gynec. & Obstet., Oct., 1929, Vol. XLIX, No. 4, 503-509). The ultimate results of ureter reconstruction have been far from gratifying and it is almost a unanimous rule with French and German urologists that a kidney is lost after a ureter has been severed.

Ureters are usually injured during a pelvic operation. Poor results of the anastomosis; namely, stricture at the point of repair, hydro- or pyo-ureter, pyonephrosis, and perirenal infection, are, for the most part, due to the infectious nature of these operation, or because the surgical accident is not recognized at the time.

Obstruction occurs even in the absence of infection causing a hydro-ureter and pressure atrophy of the renal tissues. This process may be rapid or slow as shown by reports of cases up to twenty-seven years postoperatively, before the entire function was lost. However, Reed, Delbet, Brizaski, Friedrick, Bourniot, Rochet, Lenormant and Leibovici, Chifelian and Petit, have reported cases, followed over long periods of time, in which there was little or no renal impairment. With this evidence in hand it would be well to disregard the rule of most surgeons, who state that a nephrectomy should be performed in the case of a severed ureter, especially when one does not know the function of the remaining kidney.

The author considered stenosis as the cause of ureteral inertia and the resulting renal degeneration, and must therefore be prevented.

Traumatic lesions of the urethra resulted in stenosis (with few exceptions) before the use of cystostomy for diversion of the urine was used, since when, the results of urethral repair have greatly improved. Therefore the urine passing over the suture line must have something to do with the cicatrization and the author evolved the following technic:

Briefly: A pyelostomy performed and a bougie of sufficient size to fit the ureter snugly was introduced downward and held in place by a suture. A small catheter was placed in the pelvis (this was found to be useless later, as the fistula would remain open as long as the bougie was in place) and together with the short end of the bougie drawn out through the incision. A strip of gauze placed between the posterior edge of the kidney and the posterior abdominal wall (for 5 days) lessens infection.

*Repair of ureter.*—The end-to-end technic was used, being sure that all redundant mucosa was removed. The anastomosis was accomplished by four fine black silk sutures, using an eversion stitch and being sure that there was no mucosa between the muscle layers. With muscle to muscle and mucosa to mucosa quick regeneration occurs with a minimum amount of cicatrization.

*Results.*—The temporary pyelostomy remained open as long as the obstructing bougie was in place, but closed immediately upon its removal.

Peristalsis in the severed ureter was not hindered at the time of operation, but was absolutely inert after twenty-four hours and only a slight response in the distal portion. The proximal ureter continues to be inert although one animal showed some contractions by stimulation. The distal end showed intact peristalsis about one week alter.

If the anastomosis has been satisfactory and without stenosis, the contractions pass from one end of the ureter to the other without interruption at the end of seven weeks. Even with slight obstruction and ureteral dilatation strong contractions were observed.

In summary the author states that diversion of the urine permits cicatrization of the ureter without development of stenosis just as cystostomy checks the formation of traumatic stricture of the urethra. By preventing ureteral stenosis this procedure removes the cause of dilatation, atony, and finally complete renal atrophy.

L. G. Thomas, M.D.

CARCINOMA OF THE COLON—INTRAPERITONEAL VACCINATION BY MIXED VACCINE OF COLON BACILLI AND STREPTOCOCCI: Fred W. Rankin, and Arnold Bargen (Arch. of Surg., Vol. 19, No. 5, 906-914). Mortality statistics show the need of adopting useful methods to lower the death rate in this particular disease. The authors report the result of 60 cases between June 1 and November 6, 1928, in which intraperitoneal vaccine was used.

A majority of the patients reported received vaccine, the bacteria of which were isolated from patients who died of peritonitis. Vaccines were prepared separately of bacilli coli and streptococci and later a mixed suspension in sodium chloride was made with a density of about 1,000,000,000 organisms per cubic centimeter. Twenty-five hundredths of a c.c. of this vaccine made up to 1 c.c. with a physiological salt solution of sodium chloride was given subcutaneously one week before the anticipated date of operation. If no undue reaction occurred 1 c.c. of this vaccine in 10 c.c. of the solution was injected intraperitoneally the next day and a similar dose 2 days later. The patient was then given 2 days of rest and the operation was performed.

Reactions following intraperitoneal injections are similar, fairly severe, fever as high as 103.5 degrees F. within 2 to 4 hours after injections, diffuse abdominal soreness, some distension, occasional chills and leukocytosis. The reaction after the second intraperitoneal injection is lighter.

The mortality in the control group of 60 cases was 23 per cent; the mortality in the group which received intraperitoneal vaccine was 5 per cent.

The mortality lowering of 18 per cent, while it may not be enitrely attributed to the use of the vaccine, recommends it as a likely factor.

C. W. Mayo, Jr.

# PEDIATRICS

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THE NUTRITION OF HEALTHY AND SICK INFANTS AND CHILDREN. For physicians and students. E. Nobel, C. Pirquet, and R. Wagner, of the Children's Hospital of the University of Vienna. Second edition rev. with 78 illus. and 6 charts. Authorized translation by Benjamin M. Gasul. Price $3.50. Philadelphia: F. A. Davis Co., 1929.

Pirquet's Nem system was devised during the war period for the purpose of feeding large groups of individuals on an economical basis. This book represents the first attempt to introduce this system to the English-speaking physician. It involves the replacement of our comparatively simple caloric system by a new, rather involved, and sometimes weird nomenclature. (Ex. sacratama, socrutomo, etc.) We have found Schick's concept of dubo (whole milk plus 17 per cent cane sugar) the only practical application of this method. It is pleasant to note that the authors urge the use of dubo as a concentrated food and not for complementary purposes. American pediatricians may take exception to the authors' three-hour nursing schedule for all infants. American mothers may object to a nursing schedule lasting an entire year. The clinical consideration of nutritional disturbances originated long ago with Finkelstein and was stressed by Von Reuss in his classic text on "Diseases of New Born."

With the omission of the generally unfamiliar nomenclature, the book assumes a very elementary aspect. We do not think that the average practitioner will profit greatly by a study of this book.

D. M. Siperstein, M.D.

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BERIBERI IN LATE INFANCY: THE RESULT OF CELIAC DISEASE. Sidney V. Haas, M.D., New York (Arch. of Ped., August, 1929, Volume XLVI, No. 8). Beriberi is produced by a deficiency of vitamin B. It may be due, as in the cases to be reported, to an inability of the organism to abstract this substance from the ingested food.

Polished rice from which the pericarp and aleurone layers have been removed, when the chief article of diet, is the most common cause of beriberi.

Beriberi is a composite of three main sets of symptoms:

1. The symptoms of peripheral neuritis.
2. Cardiac insufficiency.
3. A generalized tendency to edema.

A study of celiac disease reveals in some of the severe cases the presence of all the classical symptoms of beriberi, edema, pallor, dyspnea, cardiac dilatation, parasthesias, weakness, irritability, and paralyses.

Beriberi is due to the absence of vitamin B from the diet. Celiac disease is characterized by an inability of the organism to utilize carbohydrates, the chief carriers of vitamin B. The end result in either case is the same whether vitamin B is not ingested or whether it is not absorbed.

The pathology of beriberi and celiac disease is the same, excepting that in beriberi nerve degeneration has been frequently demonstrated, while there is no report available of any case of celiac disease in which the nerves have been examined. The presence of paralyses in the latter disease makes it probable that examination of the nervous system would reveal such degeneration. The symptoms are almost identical excepting that constipation is common in beriberi; diarrhea, in celiac disease. Cardiac symptoms are often prominent in beriberi, while not prominent in celiac disease.

For a long time the resemblance of cases of celiac disease to the published description of beriberi made it seem probable that celiac disease and beriberi might be the same disease, but the absence of classical signs in other cases, made this conclusion unlikely.

R. N. Andrews, M.D.

DANGER SIGNALS IN NEW-BORN INFANTS: Julius Levy, M.D., Trenton, N. J. (Arch. of Ped., November, 1929, Vol. XLVI, No. 11). For the past 14 years in the City of Newark, there has been practically no reduction in the neo-natal mortality, that is, the deaths in the first month of life.

Cerebral hemorrhage is more common than is generally thought. In a study made of a large series of new-born, it was found that some bleeding occurred in as high as one-third of all births, often without any symptoms.

First is the importance of giving careful thought to an infant who fails to nurse successfully. When taken to the breast, it makes very little effort either to take the nipple or leave that nipple, that is, it is apathetic.

You should be suspicious about the new-born infant who is good, and who does not cry. The infant with cerebral hemorrhage does not cry easily, even under irritation.

*Inanition.* Another condition which is well to discuss is brought about by insufficient nutriment or water in the first few days, causing weight loss. If such an infant is being put to the breast regularly and apparently nursing, we are apt to believe that it is receiving sufficient nutriment and sufficient water. Weighing such infants before and after nursing has satisfied us that babies can go through sucking motions without abstracting practically anything from the breast. The supply of an ounce of water every three hours with possibly a five or ten per cent glucose solution will help to tide over these infants until the mother secretes more milk or the infant is put on artificial feeding.

The danger signals in a premature baby are, first, subnormal temperature; second, loss of weight, and sudden rise of temperature. An attempt should be made to keep the body temperature above 97 degrees and below 101. The subnormal temperatures are due to the immature and unstable heat centers. The danger of loss of weight is readily understood, since the premature infant is born without any water or fat reserve. Sudden rise in temperature is the result of infection, disturbances of metabolism, or an excessive supply of artificial heat. In order to maintain the body temperature, it is not necessary to have specially constructed incubators. Surrounding air should be between 85 degrees and 90.

*Pyloric Stenosis.* Well-nourished breast-fed infants who suddenly begin to vomit at or about 4 to 8 weeks of age should be suspected of having a pyloric spasm or pyloric stenosis. This vomiting is characteristic in that in the first place it starts rather suddenly and that the vomiting is much more profuse and much more energetic than the usual regurgitation or vomiting from indigestion. It is not uncommon to be informed that the vomiting was less after every change in formula. Atropin sulphate in proper dosage will control practically every case of pyloric spasm and pyloric stenosis. Doctors are unwilling or afraid to give the proper dosage. Infants six weeks old are given as much as one-twenty-fifth of a grain of atropin sulphate in 24 hours. Recently an infant 11 months old was cleared up in six weeks atfer receiving one-hundredth of a grain of atropin every three hours.

R. N. ANDREWS, M.D.

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BREAST FEEDING: Jesse R. Gerstley, M.D., Chicago (Arch. of Ped., December, 1929, Vol. XLVI, No. 12). For centuries no one has disputed the superiority of maternal nursing, but still, for some reason or other, it has been subjected to relatively little scientific scrutiny.

Scanning the tables, one is impressed with several things. First, that in each baby the amounts taken at the individual nursings during the day were quite variable. In keeping with this, note the varying amounts of food taken daily in 24 hours. It will be seen that no days are identical. One of the most surprising observations is the enormous quantity of milk taken by the first baby at some of his nursings, even during the early months of life. As early as the fourth week it will be noticed that this baby took as much as 8½ ounces and two days later nine ounces at one 20 minute nursing.

Notice how much less the younger brother took when of the same age, and again note that the younger brother, even when he reached the weight of the older, still never took such quantities even though the breasts were full.

These results show what many pediatricians have felt and repeated frequently, that it is impossible to standardize the diets of infants. What they take depends primarily upon their own constitutional demands. We should take a lesson from this in bottle feeding. Maybe it would be wiser to expect the infant to show decided variations in the amounts taken in the individual bottles and in the daily 24 hours, rather than to expect him to show superhuman accuracy.

R. N. ANDREWS, M.D.

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A FURTHER REPORT OF THE TREATMENT OF WHOOPING COUGH BY INTRAMUSCULAR INJECTIONS OF ETHER: Julius Levy, M.D., and A. S. Finkelstein, M.D., Newark, N. J. (Arch. of Ped., December, 1929, Vol. XLVI, No. 12). A report on the treatment of whooping cough by injections of ether was made in Archives of Pediatrics, July, 1928. It was pointed out on account of the high percentage of necroses, it did not seem to be a desirable treatment. Later experience with a modification in the method has caused them to change their opinion and they are, therefore, making a second report on the treatment of an additional 104 cases.

Of the 104 patients, 76, or 74 per cent, were termed *improved;* 23, or 22 per cent, were termed *unimproved;* 5, or 4 per cent, were termed *slightly improved.*

Ninety-four patients received the usual dosage of one ampoule intramuscularly, containing one c.c. of ether plus one c.c. of oil. Ten patients received double the dose, or two ampoules.

Among the entire 104 patients treated, no abscess or necrosis at the area of injection was seen. The meth-

od of treatment consisted of cleansing the skin with five per cent tincture of iodine, washing off with 95 per cent alcohol, giving the injection in the buttocks, alternating sites of injection. No other medication was allowed.

All the children bore the injections well. The age of the patient did not seem to enter into the matter of improvement or dosage. They suggest a further study with double the dosage, two c.c. of ether in two c.c. of oil, since it may be that a larger dose will bring even better results. The treatment at first is given every day.

R. N. ANDREWS, M.D.

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SINUSITIS AND TUBERCULOSIS IN CHILDREN—Central Pulmonary Infection Secondary to Sinusitis in Children Simulating Juvenile Tuberculosis: Henry A. Reisman, M.D., Jamaica, N. Y. (Arch. of Ped., November, Vol. XLVI, No. 11). Although the two conditions may at first appear somewhat remote, the resultant pulmonary infections that may arise as a complication to a primary sinusitis may present a picture clinically, physically, and roentgenologically so similar as to be at times very confusing with that of juvenile tuberculosis. Sinusitis has long been recognized as a clinical entity, but it is only in the last several years that we have begun to appreciate its prevalence, complications and sequelæ. Dean, White, Oppenheimer, Marriott and others have reported sinusitis with considerable frequency in children.

The white race is anatomically peculiarly more susceptible to sinusitis than the colored race because of the tendency to and frequency of nasal obstruction in the former and wide nasal chambers with free drainage in the latter. Accordi, in 1911, stated that it should be regarded as an established fact when children suffer from frequent attacks of head colds that some of the accessory sinuses are involved.

All cases of sinus infections should be regarded as potential chest cases just as all cases of tonsillitis are regarded as potential cases of cervical adenitis.

Mullin and Ryder in 1921 found, first, that the lymphatic drainage of the antrum is by way of the submaxillary and retropharyngeal glands into the internal jugular nodes and deep cervicals, then into lymph ducts, great veins, right side of heart and into the lungs by way of the pulmonary artery; second, extension by inhalation.

The association of sinus and pulmonary infections has been noted too often to be coincidental. The incidence of sinus involvement and the result of the treatment of the sinusitis upon the pulmonary infection were striking. The general condition greatly improved.

Possibly a large proportion of non-specific chronic pulmonary infections, which have been observed in the past, have been the result of unrecognized and untreated sinusitis.

The physical signs in the chest are almost identical in the early stages of both conditions. When râles are present, the râles secondary to sinus infection are usually of the large moist character, whereas those from the tuberculous infection are of the fine crepitant type. It is surprising how many of these children have no symptoms or clinical evidence pointing to sinus disease despite the existence of the same.

If the tuberculin test is negative we must then look elsewhere for the cause of the pathology in the central lung field and it will often be found in the sinuses. But if the tuberculin test be positive and sinusitis present, it is a difficult problem to tell how much of the superimposed pathology could be attributed to secondary changes from the sinusitis and how much to the tuberculous focus.

R. N. ANDREWS, M.D.

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A FURTHER CONTRIBUTION ON CELIAC DISEASE: Charles Gilmore Kerley, M.D., New York (Arch. of Ped., January, 1930, Vol. XLVII, No. 1). The author looks upon celiac disease as a clinical entity and not simply an aggravated chronic gastro-intestinal indigestion. Every case presents the classical signs of extreme emaciation, large abdomen, copious, foul stools, anorexia or capricious appetite, the characteristic facial expression, and greatly disturbed mental reaction.

The plan of management is to discontinue milk in all forms and combinations and use a powdered casein. The Walker Gordon Laboratory prepares the casein mixture in most of the cases after the following formula:

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| Casein (sodium caseinate) | 2¼ ounces |
| Starch (baked barley flour) | 2¼ ounces |
| Sugar (can, lactose or karo) | 2¼ ounces |
| Water | 30 ounces |

This combination gives a caloric value of about 16 per ounce.

Early in the case, the author uses the casein, starch, sugar mixture as the only means of nourishment together with a teaspoonful of sherry wine diluted with a small portion of water at two or three-hour intervals. After a few days, perhaps a week, ground rare beef, white meat of chicken, powdered hard-boiled egg yolk, gelatine pudding, banana and bread crusts are added. He endeavors to give orange juice early in every case. As a rule, cod liver oil is not well tolerated even in small amounts and it is rarely used.

When the acute symptoms are somewhat in hand, a decoction made from potato, turnip, carrot and celery is given in small amounts. Relapses of a temporary nature often occur and the stools return to the former characteristic odor and appearance.

Cases in which there is a tendency to diarrhea he gives 20 grains of bismuth subnitrate every two hours with small dosage of Dover's powder.

The satisfactory results in these cases are due to the fact that cow's milk was entirely omitted from the diet.

R. N. ANDREWS, M.D.

MUCOUS AND UMBILICAL COLIC IN CHILDREN: George J. Feldstein, M.D., Pittsburgh, Pa. (Arch. of Ped., January, 1930, Vol. XLVII, No. 1). The diagnosis of the cause of abdominal pain in children demands even more frequently than in the adult a consideration of conditions extraneous to the abdomen itself. The most familiar example is the referred pain to the abdomen, as in cases of pneumonia, pleurisy, endocarditis, pericarditis, the intestinal form of influenza, and the abdominal pains of throat infection.

There are, in addition to these causes, two conditions of great clinical importance in childhood—mucous and umbilical colic, which may simulate more serious abdominal conditions.

These forms of abdominal complaint in children have as a background two factors, as a rule: (1) An hereditary constitutional tendency; (2) Bad environmental surroundings.

It was Moro who pointed out that cases of umbilical or navel colic have nothing to do with appendictis, and are to be handled by suggestive treatment. These cases are characterized by frequently recurring attacks of apparently violent abdominal pain, which are mainly referred to the region of the umbilicus. Frequently there is vomiting.

The cause of this peculiar type of colic is cramplike contractions of the bowel.

Mucous colic which is similar to umbilical colic in its etiology, severity of the abdominal complaint, and which occurs in the same type of neuropathic children, is characterized by the periodic passage of large masses of mucous often in the form of tubular casts, ribbons, or shreds, with violent colic and tenesmus.

In umbilical colic there is no inflammation in the intestinal tract. It is purely a secretory neurosis in constitutionally predisposed children, and is due to hypersecretion of the glands of the intestinal mucosa.

Treatment of Mucous Colic: Colonic irrigations with salt solution or enemata of oil are of value in acute cases or in the sub-acute. In cases with a tendency to diarrhea, the diet should be mainly protein. Sodium bromide should be used to quiet the underlying neuropathic condition. Suggestive treatment as for navel colic is also indicated. The treatment of cases having a neuropathic basis only is chiefly by suggestion.

R. N. ANDREWS, M.D.

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CHOREA: ITS GENESIS AND ITS CLASSIFICATIONS: J. Epstein, M.D., New York (Arch. of Ped., Feb., 1930, Vol. XLVII, No. 2). Chorea is a constitutional neurosis. In many cases there is a familial tendency. The choreic disorder is most common during childhood, when the nervous and psychic mechanisms have not yet acquired the poise, steadiness and orderly conduct essential to proper neuro-psychic functions. Chorea may be divided into three classes: Pathologic, or infectious chorea, physiologic or functional chorea, and psychologic or emotional chorea.

*Pathologic or Infectious Chorea.*—Chorea was definitely traced to rheumatic infection as the exciting cause. In all cases of pathologic or infectious chorea, the infection acts only as an exciting cause on an underlying choreic neurosis.

*Physiologic or Functional Chorea.*—These children were unusually active, irritable, quick and irregular in their actions. When to this physiologic hyperfunction was added some unusual physical or mental pressure, reflex irritation, thyroid overwork, puberty, the onset of menstruation, or any other new physiologic demand, a choreic disorder was the result.

*Psychic or Emotional Chorea.*—These children were extremely emotional, subject to convulsive attacks and night terrors. Others laughed unduly and displayed a violent temper. An added sudden mental shock as from fright or grief precipitated an attack of chorea.

*Diagnostic Symptoms and Signs.*—The symptoms and signs of chorea are the result of both the primary neurosis and the secondary etiologic factors. In all cases there is twitching, turning, twisting or jerking of the various parts of the body, due to irregular, discordant contractions of groups of muscles. The entire motor system may be said to be in a state of fibrillation.

Chorea in itself offers a favorable prognosis. It is the damage to the heart that makes chorea a formidable disease. Post-choreic endocarditis is quite common in the infectious type of chorea. Chorea frequently injures the nervous and psychic systems of the child. A close observation will show that these children react abnormally to the ordinary physiologic and psychologic events of life.

*Treatment.*—Physical and mental rest are imperative. Foci of infection must be removed. Hydrotherapy in the form of warm baths or cold spronges, depending on the child's reaction, are very useful .

R. N. ANDREWS, M.D.

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BISMUTH THERAPY EXCLUSIVELY IN CONGENITAL SYPHILIS: John F. Coppolino, M.D., Philadelphia (Amer. Jour. of Dis. of Children, February, 1930, Volume 39, Number 2). Congenital syphilis has always been refractory to treatment. Since the introduction of bismuth as an antisyphilitic agent, much has been written of its use in acquired syphilis, but comparatively little concerning its value in the congenital form.

The preparation used was bismuth salicylate in oil suspended together with camphor and creosote, 1 c.c. of which contains 130 mg. of metallic bismuth. In the earlier cases he started with a dose of from 15 to 30 mg. in young infants, and 65 mg. in older children. The dose was increased to 65 mg. for children under 1 year of age, and to 130 mg. in older children.

The course of treatment consisted of twenty injections at weekly intervals. A blood test was taken at the beginning and termination of each course, and if it was positive, the treatment was immediately continued; if negative, a four weeks' rest was allowed. The maximum number of courses administered was three, after which the patients returned every month for examination and blood tests.

The injection is given alternately and deeply into

the upper and inner quadrant of each buttock. Care must be exercised that a blood vessel is not encountered as evidenced by drawing blood into the syringe. After the injection has been made, the syringe is disconnected from the needle, which is left in situ. Air is drawn into the syringe and injected. This clears the canal made by the needle of any bismuth that may be forced back, especially if the muscles contract. The needle is then withdrawn, firm pressure applied and the part massaged. If this is done, then infiltration and induration previously reported will be reduced to a minimum.

*Conclusions.*—(1) Bismuth in rather large doses is apparently well tolerated by infants and children. (2) It is useful in the treatment of older children, but does not effect cure. (3) It is more efficacious in young infants, rendering them both symptom-free and serologically negative. (4) No absolute valuation of the drug can be made at the present time. These cases should be followed for several years to determine the permanency of results.

R. N. ANDREWS, M.D.

# ROENTGENOLOGY

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ROENTGEN DIAGNOSIS OF LESIONS OF THE JEJUNUM AND ILEUM. Max Ritvo, M.D. (Am. Jour. Roent. Feb., 1930, XXIII, 160). A brief résumé is given of the conditions affecting the jejunum and ileum which can be demonstrated by X-ray examination. These lesions are relatively rare but of great importance when present. Diagnosis by clinical methods is very difficult and often impossible and the roentgen examination is frequently the only method of arriving at a diagnosis preoperatively.

The conditions discussed are:

1. Obstruction—this can be studied by plain films of the abdomen or after the administration of an opaque meal.
2. Hypermotility—this is best studied both fluoroscopically and by films made at intervals.
3. Diverticula—these may be single or multiple.
4. Malpositions and displacements—these are relatively common.
5. Adhesions—these are best observed by roentgenoscopic studies.
6. Tuberculosis—is located most commonly in the cecum and terminal ileum and shows irritability with hypermotility and filling defects.
7. Ulcers—these are difficult to diagnose.
8. Neoplasms—these are very rare and difficult to demonstrate.
9. Foreign bodies—the opaque ones are easily demonstrable.
10. Postoperative changes—this is particularly valuable in demonstrating function following gastroenterostomy.

The roentgen findings of each of these conditions are discussed briefly and the chief diagnostic points outlined.

JACOB SAGEL, M.D.

THE PRESENT STATUS OF HYSTEROSALPINGOGRAPHY: A. R. Witmer, M.D., H. P. Cushman, M.D., and T. Leucutia, M.D. (Am. Jour. Roent., XXIII, Feb., 1930, 125). The authors present a very complete review of the literature and a report of 512 personal cases. The various contrast media used in hysterosalpingography are described and the advantages and disadvantages of each presented. Their technic is also given.

They conclude that hysterosalpingography by means of lipiodol is a safe and simple procedure. The method is of great diagnostic value in developmental anomalies of the genital organs, in tubal affections leading to sterility, in certain very carefully selected cases of pregnancy in which therapeutic abortion is indicated or where a differential diagnosis from other obscure conditions is essential, in uterine tumors, excepting malignancies, and in certain extra-uterine tumors. The contraindications are recent hemorrhage, inflammatory conditions that are not completely quiescent, active infections or malignancies involving the cervix, previous intra-uterine interventions, ectopic gestation or uterine gestation in which a therapeutic abortion is not desired, infected uterine or cervical polyps and fever. In certain instances the injection of lipiodol is of direct therapeutic valuee.

The article is accompanied by 49 plates illustrating the conditions described.

JACOB SAGEL, M.D.

INTERPRETATION OF ROENTGENOGRAMS OF CHEST IN CHILDREN BASED ON OBSERVATIONS OF NECROPSY: John A Bigler, M.D., Chicago, Ill. (Amer. Jour. Dis. of Child., Nov., 1929, Vol. 38, No. 5, p. 978). One hundred seventy-one pairs of lungs were examined post mortem. These children died in hospitals which do not admit contagious or open tuberculosis cases.

During life roentgenograms were made at intervals. After death a roentgenogram was taken of the chest and finally of the excised lungs inflated with air. Sometimes opaque substances were injected into the circulatory system of the lungs, the bronchial tree, or both, and pictures taken. Some of the lungs were fluoroscoped from different angles. The lungs were then dissected and microscopic sections made.

Even under the ideal conditions afforded by roent-

genograms of excised lungs the bronchi could rarely be followed farther than the inner third of the lung field. In the injected lungs the bronchi could be followed to the periphery. Circular areas of decreased density near the hilum are caused by bronchial branchings, parallel to the axial ray. They become opaque in the injected lung.

The linear markings were more marked and showed finer detail in the pictures of the excised lungs with the vessels from the heart tied off so that no blood could escape. When the blood was washed out of the pulmonary vessels, the markings became less distinct. The beaded shadows of the trunks disappeared. Injection of these vessels increased the linear markings.

Linear markings are due to blood in arteries and veins and to a lesser extent to the bronchi. Blood vessels give shadows of even density; bronchi give two shadows with a narrow band of decreased density between. Nodular areas along the linear markings are not due to tubercles or lymph nodes, but branches of blood vessels parallel to the axial ray.

Round, definitely circumscribed areas of increased density in the hilum or inner third of the lung fields are not due to lymph nodes or scars, but to branches of large blood vessels. They practically always occur in the course of the linear markings and change position or disappear on successive exposures.

Dissection showed lymph nodes present in every hilum. Increase in size and number of these nodes did not cast shadows on the films. Only nodes that contained calcium were recognized in the roentgenograms of excised lungs.

In children that died after measles or pertussis, the hyperplastic, inflammatory tracheobronchial glands cast no characteristic shadows. The increase of hilar shadows in these cases is explained by pressure atelectasis, and inflammation with exudation of the surrounding lung tissue.

Caseous lymph nodes also failed to cast shadows unless they contained calcium.

It is therefore concluded that normal lymph nodes cast no shadows; hyperplastic nodes, whether caseous or inflammatory, whether in the hilum or intrapulmonary tissue, cannot be recognized if they do not contain calcium. They will not cast shadows unless they are large enough to encroach on the pulmonary fields.

G. J. Ferreira, M.D.

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BRONCHIAL OBSTRUCTION—ITS RELATION TO ATELECTASIS, BRONCHOPNEUMONIA AND LOBAR PNEUMONIA: Pol N. Coryllos, M.D., and George S. Birnbaum, M.D. (Amer. Jour. Roent., Nov., 1929, XXII, 401). The authors present a roentgenographic, experimental, and clinical study of bronchial obstruction and its relation to atelectasis and pneumonia. Bronchial obstruction is a factor common to both of these conditions, the only difference being the nature and virulence of the microörganisms present in the occluding exudate. The lobar pneumonias and atelectases were produced by bronchoscopic methods and checked by serial roentgenograms which showed a striking similarity in appearance. Seven possible objections to this theory are discussed.

The authors conclude that lobar pneumonia is a pneumococcic atelectasis due to bronchial obstruction by mucous exudate infected with virulent pneumococci, and that atelectasis or apneumotosis (generally, but not always, a postoperative pulmonary complication) is due to bronchial obstruction with mucous exudate infected with pneumococcus Group IV, an organism of low virulence. The role of bronchitis in the evolution of the disease syndrome is represented by: bronchitis—atelectasis—pneumonia.

The article presents an excellent study of this subject and is well illustrated by roentgen plates of both human beings and animals, and gross and microscopic pathology. A review of almost the entire literature is included.

Jacob Sagel, M.D.

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## EYE, EAR, NOSE AND THROAT

**SUPERVISORS:**
VIRGIL J. SCHWARTZ,
MEDICAL ARTS BLDG., MINNEAPOLIS

ARTHUR C. DEAN
HOT SPRINGS, SOUTH DAKOTA

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THE TONSILS AND SOME EXPERIENCES OF THEIR SURGICAL TREATMENT: Herbert Tilley, F.R.C.S. (Eng.), London (Surg., Gynec. and Obstet., Jan., 1930, 1.1A. 167). Résumé of an address presented before the Clinical Congress of the American College of Surgeons, at Chicago, Oct. 14-18, 1929.

After a somewhat apologetic introduction for the subject of discourse the author steps into the various phases and conditions one is liable to encounter and also some of the abnormalities seen in the practice of an otolaryngologist.

The term "supra tonsillar fossa" comes in for his first criticism. He states that since that space is lined with epithelium, contains more or less loose lymphoid tissue and is within the capsule of the tonsil it would be more correct to speak of it as the "tonsillar fossa."

In passing he mentions a long ossified stylohyoid ligament as well as isolated spiculês of bone and cartilage. These he thinks are embryonic "rests" of the branchial arches. The author next presented a specimen of an osteoma removed from the tonsillar fossa and the soft palate. Tonsillar calculi cause pain in the tonsil when swallowing and also in the depth of the aural meatus. This cause of deep aural pain is often overlooked. He next calls attention to the protective function of Waldeyer's ring and the presence of a lateral pharyngeal ring in many cases where tonsils have been removed early in life. The presence of tonsillar tissue in the lower part of the fossa is often the result of the lingual tonsil pushing upward instead of

having been left by a previous operator. This he attributes to compensatory developments.

Tonsillar surgery is indicated in some cases of diphtheria when a throat will not give a negative culture; in some cases of so-called tuberculous infection of the lymph glands; in chronic arthritis; and malignant disease. He does not take a stand as to the time to operate in cases of so called rheumatism.

Among the complications of tonsillectomy he first mentions hemorrhage; next, pulmonary complications. To prevent hemorrhage he ligates the descending branch of the posterior palatine artery in every case and if necessary the tonsillar branch of the facial. He removes the tonsil by dissection in all cases. Of pulmonary complications he has had no experience, so says little about them.

ARTHUR C. DEAN, M.D., F.A.C.S.

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SOME POINTS IN THE TREATMENT OF MENINGITIS: G. J. Jenkins (Jour. of Laryng. & Oto., Vol. XLIV, No. 4, p. 239). In many cases of meningitis secondary to septic middle ear disease, the infection has not reached the sub-arachnoid space, so these cases can be treated well by the complete removal of the external inflammation. But this should be done only early in the disease and in any case where we suspect the infection has extended to the sub-arachnoid space, it should be opened and washed out.

Lumbar puncture is dangerous and should be done only as a diagnostic procedure, and then only 6 cc. should be withdrawn. In borderline cases it is well to wash out the sub-arachnoid space, as the risk is no greater, if one carefully cleanses the wound before doing so.

The principle of the following procedure in a case, for instance, of meningitis secondary to septic labyrinthitis, is to drain the meninges from the point of maximum infection, i.e., the labyrinth, and encourage the flow of cerebro-spinal fluid through this area, by washing through from the lumbar region.

In preparation no morphine or atrophine should be used. Prepare some iodoform by washing it free of perchloride with modified Locke's solution. Then 6 cc. of spinal fluid is removed by lumbar puncture and sent to laboratory.

A superior and inferior labyrinthotomy operation is done. The wound is washed with hydrogen peroxide and saline, then with 2 per cent alcoholic solution of iodine. A fine needle is passed into the labyrinth and the latter is then washed with the iodine solution. It is now determined by the pathologist's report if further procedure is necessary. If so, fresh instruments and supplies are used. Lumbar puncture is repeated allowing only 1 or 2 drops of fluid to escape, so determining if the needle is in the sub-arachnoid space. The lumbar puncture needle is left in. Then an opening is made into the internal auditory meatus, through the inner wall of labyrinth. When the flow of fluid is established the lumbar puncture needle is connected with a reservoir of modified Locke's solution. A piece of silk-worm gut is inserted into the wound and this is left as a drain. When a few ounces of solution have passed through, serum containing 8 grains of the prepared iodoform is injected through the lumbar needle. Locke's solution is again allowed to flow until the return from the ear is clean.

Sometimes when the internal auditory meatus does not afford drainage, the cisterna pontis may be reached in front of the cerebellum. In this route considerable bone must be removed behind the lateral sinus, so a drain may be inserted along the posterior surface of the temporal bone through the dura and internal to the sinus. The wound should be packed with iodoform gauze.

As the blood pressure is always low attempts should be made to increase it, and thus increase the flow of cerebro-spinal fluid.

If drainage ceases too early it may be necessary to reëstablish it and in some cases to rewash the sub-arachnoid space.

L. G. FLANAGAN.

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ACUTE PURULENT MENINGITIS OF AURAL ORIGIN: J. P. Stewart (Jour. of Laryng. & Oto., Vol. XLIV, No. 4, p. 225). The series of cases on which this report is based consists of seventy-eight cases following chronic, and thirty-six acute, purulent middle ear conditions. These cases occurred at the Edinburgh clinic. Acute purulent meningitis occurs chiefly before middle life, seventy-four per cent occurring before the age of thirty. It also seems to be predominant in males.

The early clinical manifestations are chiefly due to irritation in the posterior fossa, this because of the aural origin of the infection. There is anxiety and confusion, with deep severe headaches in the frontal region but shifting frequently. Frequent first complaints of the patient are pain on brushing the hair and stiffness of the neck. The temperature rises rapidly and remains elevated but the pulse and respiration are at first slow, due to vagal irritation, but towards death rapidly rise. Mendel found early hyperaesthesia of the posterior meatal wall, due, presumably, to the reflex transmission of pain from the inflamed meninges, since the auricular branch of the vagus is connected with the meningeal nerves through the jugular ganglion. Frequently there is pain on pressure over the atlanto-occipital membrane when the tension of the cerebro-spinal fluid is elevated. Usually there is a leucocytosis of about 20,000 with a polymorphonuclear predominance.

The cerebrospinal fluid early is clear or slightly turbid, with the pressure varying, although increased. The cell count is above 4 per cubic mm. There is only a trace of globulin and the total protein is increased. Later the fluid is turbid to purulent and the cell count is increased, with also a relative increase of polymorphonuclears. The chlorides and glucose decrease.

In making the diagnosis serous meningitis is ruled out by the high cell count. Cerebellar abscess usually has a cell count of below fifty, with a small lymphocytic predominance; its chloride content is usually unaltered and the glucose is increased. The fluid is always

sterile. Meningism occurs only in young children, and the fontanelle pulsates.

The prognosis is generally bad. In this series there was a 93 per cent mortality, only one of the acute ear cases recovering. Early diagnosis, however, and operative procedure improve the percentage.

The only chemical treatment of any value consists of 50 cc. of 10 per cent sodium chloride daily. The operative treatment regardless of origin depends chiefly on free drainage of the cerebro-spinal fluid. Continuous drainage should be established, if possible, as through the internal auditory meatus, or by frequent spinal drainage. Seven of the eight cases recovering had daily spinal punctures, and the other had good drainage through the labyrinth. Added to this there must be drainage of the original source of infection and free exposure of the dura, since all recovering cases had a radical mastoid performed.

L. G. Flanagan.

## THE HOROVITZ PROTEINS AND LIPOIDS AGAIN

"Lipoidal substances" and "protein substances" are marketed under various names by variously named firms. Always, apparently, the chemistry is performed by and the claims are made through A. S. Horovitz. In 1915 it was an alleged cancer cure, "Autolysin," a poultice or extract made from a number of herbs. Then came the "Proteogens" of the William S. Merrell Co., reported on unfavorably by the Council on Pharmacy and Chemistry in 1918. They were numbered, different ones being for the treatment of different diseases. These mixtures of vegetable proteins were exploited to physicians by a sad outpouring of pseudoscience. Next Horovitz became identified with the Horovitz Biochemical Laboratories, with a line of "Protein Substances" similar to the "Proteogens," each claiming to be more or less specific for some disease. Now the successor to the Horovitz Biochemical Laboratories is the Lipoidal Laboratories, Inc., and a number of supply houses act as agents for the firm. "Gonolin," "Luesol," "Osmogen," "Arthritine," "Asthmazine" and other preparations similar in stated composition and therapeutic claims to the Proteogens are now promoted for physicians who think that the "bosh" in the circulars is good science because it is so confusing that it is not comprehensible. (Jour. A. M. A., December 21, 1929, p. 1975.)

## THE ETIOLOGY OF INFLUENZA

I. S. Falk and his colleagues publish a preliminary report of their work on the etiology of influenza which does not go far beyond previous research on influenza. The difficulty in interpreting the results is largely due to the fact that it is difficult to distinguish clinical epidemic influenza from acute respiratory infections in monkeys and, indeed, in man. In 1892 Pfeiffer described an organism as the causative organism of influenza and since that time other allegedly causative organisms have been described. The green-producing streptococcus isolated by Mathers and Tunnicliffe in 1918, the one isolated by Rosenow in 1919, the filter-passing organism described by Meyer in 1919, and the organism discovered by Olitzky and Gates called *Bacterium pneumosintes*, would seem to deserve as much consideration as should be given, at least on the basis of the available evidence, to the germ recently announced by Falk. (Jour. A. M. A., December 28, 1929, p. 2034.)

## MALLOPHENE

Mallophene is the proprietary name under which the Mallinckrodt Chemical Works markets an azo dye of the pyridine series. The patents on the product are owned by another corporation and the Mallinckrodt firm manufactures it under license from the holding company. It is regrettable that the Mallinckrodt Chemical Works sees fit to use for this preparation a different proprietary name from that used by the patent owners. The use of a number of proprietary names for identical products creates chaotic conditions. Mallophene has not been submitted to the Council on Pharmacy and Chemistry, although the firm which owns the patent has submitted its product to the Council. The Mallinckrodt firm does not appear to have presented evidence to justify the medical claims which it advances. It is to be regretted that the Mallinckrodt Chemical Works offers its product to the medical profession without first submitting it to the Council on Pharmacy and Chemistry—a recognized body working in the best interests of both the profession and the public health. (Jour. A. M. A., December 28, 1929, p. 2044.)

## UVIOL-JENA ULTRAVIOLET TRANSMITTING GLASS ACCEPTABLE

The Council on Physical Therapy reports that the window glass known as Uviol-Jena, manufactured by Schott and Gen., Jena, Germany, and submitted to the Council by the Fish-Schurman Corporation, New York, is stated to be "a glass which transmits the biological ultraviolet rays of the sun" and "in a thickness of 2 millimeters transmits at the time of installation about 60 per cent of the ultraviolet rays of a wave length of 302 millimicrons" and "even after 'solarization' it still transmits about 48 to 45 per cent of these same rays." The Council reports that acceptable evidence in favor of these claims was submitted, and hence declares it acceptable for inclusion in its list of accepted devices for physical therapy. (Jour. A. M. A., December 14, 1929, p. 1887.)

## MEDICAL TREATMENT OF CATARACT

About every five years, the ophthalmic world is thrilled by the announcement of a new medical cure for senile cataract. This has been going on for at least two hundred years. Boric acid and glycerin, ethylmorphine hydrochloride, subconjunctival injections of mercuric cyanide, radium, antigenic injections of lens proteins, mixed endocrine glands, sodium iodide in all possible combinations, and so on, have all had a trial. Not one of them has been scientifically established as of value, and more cataracts are being operated on than ever before. (Jour. A. M. A., December 14, 1929, p. 1910.)

# EXAMINATION REPORT, MINNESOTA STATE BOARD OF MEDICAL EXAMINERS, JANUARY, 1930

## BY EXAMINATION

| NAME | SCHOOL AND DATE OF GRADUATION | ADDRESS |
|---|---|---|
| Anderson, Philip Andrew | U. of Minn., M.B., 1928; M.D., 1929 | 11 Nourse St., St. Paul, Minn. |
| Arlander, Clarence E. | U. of Minn., M.B., 1929 | General Hospital, Minneapolis |
| Barnet, Emmanuel Green | U. of Minn., M.B., 1929 | St. Joseph's Hospital, St. Paul, Minn. |
| Benson, Theodore Quentin | U. of Minn., M.B., 1929 | 515 Delaware St. S.E., Minneapolis |
| Berghs, Lyle V. | U. of Minn., M.B., 1928; M.D., 1929 | Owatonna, Minnesota |
| Bjelland, Paul A. | U. of Minn., M.B., 1929 | 200 Oak Grove St., Apt. 206, Minneapolis |
| Church, Gerald T. | Syracuse Univ., M.D., 1927 | Mayo Clinic, Rochester, Minn. |
| Cummings, William G. | U. of Minn., M.B., 1928; M.D., 1929 | Glen Gables, Park Ave., Glencoe, Ill. |
| Decker, Fred Henry | Rush, M.D., 1927 | Mayo Clinic, Rochester, Minnesota |
| Gregory, Raymond Leslie | U. of Minn., M.B., 1929; M.D., 1929 | General Hospital, Minneapolis |
| Harris, Milo Truman | U. of Texas, M.D., 1928 | Ancker Hospital, St. Paul, Minn. |
| Holte, Herman James | U. of Minn., M.B., 1929 | 3707 Columbus Ave., Minneapolis, Minn. |
| Hyde, Theodore Lincoln | Harvard, M.D., 1927 | 1301 1st St. S.W., Rochester, Minnesota |
| Jolin, Raymond Voigt | Rush, M.D., 1929 | Lake Park, Minnesota |
| Kath, Reinhard H. | U. of Minn., M.B., 1929 | Ancker Hospital, St. Paul, Minn. |
| Kidder, Earle Elton | Northwestern, M.D., 1923 | Rood Hospital, Hibbing, Minnesota |
| Kingston, James Richard | U. of Minn., M.B., 1929 | Abbott Hospital, 1717 1st Ave. S., Minneapolis |
| Kullman, Harold John | Detroit Coll. of Med., M.B., 1926; M.D., 1927 | Mayo Clinic, Rochester, Minn. |
| Lenz, Joseph R. | U. of Minn., M.B., 1929 | General Hospital, Minneapolis, |
| Leonard, Samuel | U. of Minn., M.B., 1929 | University Hospital, Minneapolis |
| Manaugh, Hursel Conway | U. of Minn., M.B., 1929 | 527 5th Ave. S. E., Minneapolis |
| Michie, Thomas Campbell | U. of Alberta, M.D., 1926 | 603 1st St. S. W., Rochester, Minnesota |
| Morey, John Barnhart | U. of Buffalo, M.D., 1927 | 1201 1st St. S. W., Rochester, Minnesota |
| Neilsen, Harold F. | U. of Minn., M.B., 1929 | 102 19th St. E., Minneapolis |
| Nelson, Carl Barton | U. of Minn., M.B., 1929 | Swedish Hospital, Minneapolis |
| Onsgard, L. Kenneth | U. of Minn., M.B., 1929 | Fairview Hospital, Minneapolis |
| Perkins, James Eliab | U. of Minn., M.B., 1929 | Ancker Hospital, St. Paul, Minn. |
| Russeth, Arthur N. | U. of Minn., M.B., 1929 | 3012 Lyndale Ave. N., Minneapolis |
| Shimonek, Stewart Wenzel | U. of Minn., M.B., 1928; M.D., 1929 | 95 N. Lexington Ave., St. Paul, Minn. |
| Smith, Archie Merle | U. of Minn., M.B., 1929 | 5052 Vincent Ave. S., Minneapolis |
| Sullivan, Ralph Raymond | U. of Minn., M.B., 1929 | 619 11th Ave. S.E., Minneapolis |
| Telford, Vernon John | U. of Minn., M.B., 1929 | St. Mary's Hospital, Duluth, Minnesota |
| Thornton, Harold Clive | Emory Univ., M.D., 1926 | Mayo Clinic, Rochester, Minnesota |
| Webster, William Welch | U. of Nebr., M.D., 1928 | Leland Apartment, Rochester, Minnesota |
| Whalen, Maurice Leo | U. of Minn., M.B., 1929 | St. Luke's Hospital, Duluth, Minnesota |
| Wharton, George K. | U. of Toronto, M.B., 1927; M.D., 1928 | Mayo Clinic, Rochester, Minnesota |
| Zinn, Charles J. | U. of Pa., M.D., 1927 | Mayo Clinic, Rochester, Minnesota |

## BY RECIPROCITY

| | | |
|---|---|---|
| Cottam, Geoffrey I. W. | U. of Iowa, M.D., 1926 | Miller Clinic, Hamm Bldg., St. Paul, Minn. |
| Manley, Louis Vincent | St. Louis Univ., School of Med., M.D., 1924 | Albert Lea, Minnesota |
| Sach-Rowitz, Alvin | St. Louis Univ., School of Med., M.D., 1921 | McGregor, Minnesota |
| Stevenson, Basil Manly | U. of Iowa, M.D., 1927 | Fulda, Minnesota |

# REPORT OF OCTOBER, 1929

## BY EXAMINATION

| | | |
|---|---|---|
| Carlson, John Victor | U. of Minn., M.B., 1929 | St. Luke's Hospital, Duluth, Minnesota |
| Cox, Forest William | U. of Pa., M.D., 1925 | 101 Hillside Apts., Rochester, Minnesota |
| Dewey, Donald Herbert | U. of Minn., M.B., 1928 | West Bridge Street, Owatonna, Minn. |
| Elsey, Edward McClintock | U. of Minn., M.B., 1928 | Box 162, Glenwood, Minnesota |
| Feldman, Floyd Melvin | U. of Minn., M.B., 1929 | Ancker Hospital, St. Paul, Minnesota |
| Gleason, Wallace Anselm | U. of Minn., M.B., 1929 | St. Luke's Hospital, Duluth, Minnesota |
| Grumke, Erwin Henry | U. of Minn., M.B., 1928 | 2261 Gordon Ave., St. Paul, Minnesota |
| Hanson, Lewis | U. of Minn., M.B., and M.D., 1929 | Fairview Hospital, Minneapolis |
| Harper, Frederick Richard | U. of Mich., M.D., 1927 | Mayo Clinic, Rochester, Minnesota |
| Harrington, Bernard Daniel | U. of Minn., M.B., 1928; M.D., 1929 | Glen Lake Sanatorium, Oak Terrace, Minnesota |
| Iber, Frank C. | U. of Cincinnati, M.D., 1924 | 612 7th Ave. S. E., Rochester, Minnesota |
| Johnson, Elmer Theodore | U. of Ill., M.D., 1929 | 1928 W. Superior St., Duluth, Minnesota |
| Kilgard, Frank Milton | U. of Ill., M.D., 1929 | Clear Lake, Minnesota |
| Lamont, John G. | Trinity Univ., M.D., 1895 | c/o St. Louis County Sanatorium, Nopeming, Minnesota |
| Lende, Norman | U. of Minn., M.B., 1928 | Faribault, Minnesota |
| Lundblad, Roy August | U. of Minn., M.B., 1928 | 4800 Nicollet Ave., Minneapolis |

| Name | School and Date of Graduation | Address |
|---|---|---|
| Neumayr, George Hugo | Rush, M.D., 1928 | 2199 St. Clair St., St. Paul, Minn. |
| Paton, Walter Mudie | U. of Toronto, M.B., 1924 | Mayo Clinic, Rochester, Minnesota |
| Phillips, John Roberts | U. of Maryland, M.D., 1927 | 103-4th Ave. N. W., Rochester, Minn. |
| Riordan, Elsie Margaret | U. of Minn., M.B., 1929 | 3003 Nicollet Ave., Minneapolis |
| Rydell, William Birger | Harvard, M.D., 1929 | St. Luke's Hospital, Duluth, Minnesota |
| Sellers, Galen Krauth | U. of Ill., M.D., 1929 | 112 W. 36th St., Minneapolis |
| Serrurier, Laurence Roland | U. of Oregon, M.D., 1927 | Mayo Clinic, Rochester, Minnesota |
| Stafne, William Arnold | U. of Minn., M.B., 1928 | Moorhead, Minnesota |
| Zemke, Erhart Edmund | U. of Minn., M.B., 1929 | Fairmont, Minnesota |

## BY RECIPROCITY

| | | |
|---|---|---|
| Bullard, Mattie Jane | Rush, M.D., 1928 | Students' Health Service, University of Minnesota, Minneapolis |
| Collins, Donald Clark | U. of Calif., M.D., 1927 | Mayo Clinic, Rochester, Minnesota |
| Cremer, Annabel Beatrice | Marquette, M.D., 1929 | State Hospital, Rochester, Minnesota |
| Elofson, Carl Elof | U. of Kansas, M.D., 1929 | St. John's Hospital, Fargo, N. Dak. |
| Ghormley, Ralph Kalb | Johns Hopkins, M.D., 1918 | Mayo Clinic, Rochester, Minnesota |
| Gushurst, Edward George | Northwestern, M.D., 1921 | 1937 Aldrich Ave. S., Minneapolis |
| Morgan, Sherburne Francis | Marquette, M.D., 1927 | Francis Drake Hotel, 10th St. at 5th Ave. S., Minneapolis |
| Rider, Albert Sparr | Rush, M.D., 1900 | Flandreau, S. Dakota |
| Shane, James Howard | Harvard, M.D., 1927 | Mayo Clinic, Rochester, Minnesota |
| Stewart, Gwendolyn | Coll. Med. Evangelists, M.D., 1921 | Station A, Faribault, Minnesota |

## NATIONAL BOARD CANDIDATES

| | | |
|---|---|---|
| Cameron, Markley Connell., Jr. | U. of Pa., M.D., 1927 | 219 6th Ave. S. W., Rochester, Minnesota |
| Goldberg, Samuel Lewis | Rush, M.D., 1928 | Mayo Clinic, Rochester, Minnesota |
| Zillessen, Frederick Otto | U. of Pa., M.D., 1926 | Mayo Clinic, Rochester, Minnesota |

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